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AGRICULTURAL SURVEY OF EUROPE:

GERMANY

By

LOUIS G. MICHAEL, Foreign Agricultural Economist
Bureau of Agricultural Economics

CONTENTS

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AGRICULTURAL SURVEYS OF FOREIGN COUNTRIES

THE bulletins of the Agricultural Surveys of Foreign Countries will contain an analysis of the agricultural situation in each country from the viewpoint of the potential demand for agricultural products by those countries whose production is not sufficient to meet their national requirements and the nature and extent of the competition from foreign producers that the farmers of America must meet in disposing of their surplus in foreign markets. These surveys include a comparison between the pre-war and postwar trends in the agriculture of the countries as affected by the economic conditions, territorial changes, if any, and other factors in each country brought about by the World War.

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By Louis G. Michael, *Foreign Agricultural Economist, Bureau of Agricultural Economics*[1]

CONTENTS

A SURVEY OF GERMAN AGRICULTURE

The development of German agriculture during the 40 years preceding the war presents one of the most striking illustrations in world history of what may be accomplished in a country whose farm area is sharply limited by natural conditions, and whose expansion in production has been possible only by intensive cultural methods, the scientific use of fertilizers, and the closest attention to breeding and feeding. The stupendous accomplishments of German agriculture are illustrated in Figure 1.

Before the war German agricultural production increased at a more rapid rate than the population, in pursuance of a national policy to render the German people as nearly as possible independent of outside sources of supply. In the late nineties the upper limit of agricultural land that could be tilled at a profit, even under a system of State encouragement, had been practically reached. Ten years previously cereal production as the major agricultural activity had been abandoned and pork production as an adjunct to the potato industry took its place. The steady expansion in production continued until the outbreak of the war, the high point in the production of cereals, potatoes, and swine being reached in 1913.

[1] With the collaboration of E. C. Squire, former Agricultural Commissioner, U. S. Department of Agriculture, Berlin, now Trade Commissioner, U. S. Department of Commerce; and G. B. L. Arner, Agricultural Statistician, L. Thompson, Assistant Economic Analyst, and P. A. McDonnell, Assistant Clerk, all of the Bureau of Agricultural Economics.

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There was a falling off in 1914; and, then, during the war all factors involved in supplying the food requirements of the German people were depressed. Production in the territory now included within the present confines of the Republic of Germany fell off to about two-thirds of the pre-war normal, while the population continued to increase both relatively and actually. This resulted in an acute food shortage that was not sufficiently compensated by increased importation to allow the German people to enjoy their pre-war standard of living.

As was to be expected, potato and pork production were the first to rally from the depression of the war period, the low point having been reached in 1919. Since that time recovery has been rapid, so that in 1924 potato production was 97 per cent of the 1909–1913 average and swine 89 per cent of 1912 production.

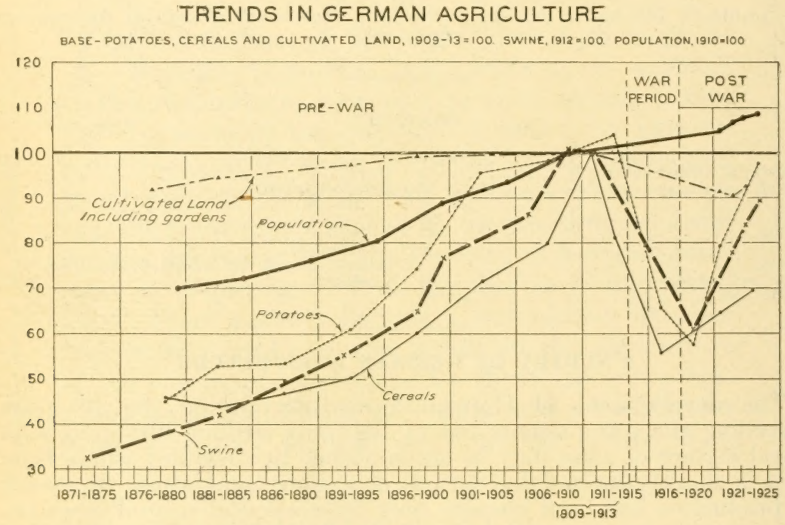

FIG. 1.—Trends in German agriculture

Lands available for profitable cultivation were exhausted about 10 years prior to the opening of the World War, while population continued to increase rapidly. Every effort was made to force production to the maximum limit with a success attained by few other nations at any time in the world's history. The outstanding feature of this attempt to make Germany as far as possible independent of outside sources of supply is characterized by the close parallel between potato and swine production not only before but also after the war. (See text.)

Index numbers of bushels of wheat and potatoes and acres of cultivated land are referred to the 1909–1913 average as 100, numbers of swine are referred to 1912, while population is referred to 1910 as a base. In each case the pre-war data are compared with the basic data for the whole of the German Empire, while post-war data are compared with data calculated on the basis of the areas within the boundaries of the German Republic as of 1923.

The low point in cereal production was reached in 1917–18, and in land under the plow in 1922. Since then the tendency has been upward, but recovery has been relatively slow because of the handicaps under which German agriculture has been laboring. It is the subject of much debate whether some of these handicaps are to be removed. As a result cereal production, particularly rye production, is nearly at low ebb, so that Germany, formerly a rye-exporting country, now imports this chief bread grain of her people.

Should German agriculture return to pre-war levels, domestic production would be still farther from satisfying German food requirements than was the case before the war. This is so because

population has continued to increase at nearly the pre-war rate, while food production has received a vital check. Strenuous efforts are being made toward recovery; but, in any case, a relatively greater importation of foods and feeds will be required in the future to maintain the German people at their pre-war standard of living than was required before the war. The future may witness any of three contingencies—(1) still greater efforts on the part of German farmers, particularly in meat and fat production; (2) a decline in the standards of living; (3) a greater dependence upon outside sources of supply for the necessities of existence. It is probable that in future readjustments there will be more or less shifting of the relative status of each of these fundamental factors in German economic life. But the whole trend of the German situation is toward an increased demand for foodstuffs.

Farmers of America are interested in German agriculture to the extent that our surplus wheat, pork and pork products, and to a lesser extent our rye, beef, and corn shipped to German markets must meet with competition from locally grown food and feedstuffs. During each of the seasons 1921–22 and 1922–23 the imports of wheat from the United States into the Republic of Germany far exceeded the total average pre-war wheat importations into the former Empire; and, though there was a falling off in 1923–24 (see Table 1) wheat importations for the 6 months July 1 to December 31, 1924, exceed by more than 50 per cent the importations of the preceding 12 months. Rye imports during these 6 months were more than twice those of the preceding 12 months and about eighty-eight times the pre-war average. Increases in our sales of bacon, fresh pork, and lard to Germany in recent years have been relatively enormous, as indicated in Table 1:

TABLE 1.—*Trade of the United States with the German Republic in specified farm products, July 1, 1921, to December 31, 1924, compared with that of the United States and the German Empire, 1909–10 to 1913–14* [1]

[In thousands—000 omitted]

Item	German Empire	Republic of Germany			
	Average 1909–1913	1921–22	1922–23	1923–24	July 1–Dec. 31, 1924
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Wheat [2]	16,595	45,521	25,204	16,073	24,410
Rye [3]	178	4,761	35,930	7,201	15,759
Corn	5,081	33,282	19,337	1,192	1,036
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Bacon	1,557	70,474	63,771	85,906	19,982
Fresh and simply prepared pork	10,925	59,473	22,700	34,829	9,037
Lard	192,184	217,530	172,519	256,478	109,844
Beef, fresh, frozen, and prepared	2,267	20,270	14,008	14,039	8,096

[1] Net imports, except for 1923–24 and July 1–Dec. 31, 1924, when total imports are used.
[2] Including wheat flour.
[3] Including rye flour.

The increased sales of foreign-grown agricultural products in German markets since the war are directly attributable to the present depressed state of German agriculture. Areas under cultivation to wheat, rye, oats, and sugar beets are far below their pre-war level; and, although there are more horses, sheep, and goats in the Republic of Germany to-day than were found within the same territories of the Empire before the war, the numbers of cattle and swine are far below their normal level.

Comparing the average areas sown in 1909–1913 to various crops in the territories now composing the Republic of Germany with those sown in 1924, wheat has fallen off 404,000 acres; rye, 2,188,000 acres; oats, 817,000 acres; sugar beets, 199,000 acres. On the other hand, barley acreage has increased 107,000 acres and potatoes 45,000 acres. A comparison of official estimates as of December 1, 1913, with the census of December 1, 1924, shows a decrease of 1,180,000 in the number of cattle and 5,689,000 in the number of swine.

This depressed state of German agriculture and, consequently, the lessened ability of German farmers to supply from their own homegrown products the food requirements of their own markets is the result of a series of complex influences which have affected in varying degrees the production of agricultural supplies in the Republic.

The changes of territory brought about by the terms of the Versailles treaty have produced certain permanent effects upon the basic relationships of Germany's agriculture to the economic welfare of the State. The events of the war and of the years immediately following have produced other effects, some of which are certainly only temporary, being associated with the general economic crisis through which all Europe is passing and which has affected Germany particularly, intensifying the depressing influences that have so greatly lowered the purchasing power of city dwellers and discouraged German farmers, not only on account of unsuitable markets but also on account of a series of handicaps that have tended to reduce the production of agricultural surpluses nearly to minimum.

During 1923–24 the general economic status of Germany was somewhat improved through the stabilization of the currency by means of the renten-mark. At the end of 1924 came the hope of the permanent revival of industry through the adoption of the Dawes plan. It is probable, beginning with 1925, that German industry and German agriculture are entering upon a new era—an era of reconstruction. Therefore it is important at this time to strike a balance of the situation up to this date to give a background against which to appraise the influence that the revival of German industrial and commercial activities and the improvement of Germany's economic situation will have upon the agriculture of the nation.

The general demand within Germany for food will increase considerably over the present demand, in keeping with the return of German industry toward normal prosperity and a higher purchasing power of those engaged in industry and commerce. In an open market the German farmer will have somewhat the advantage of the farmers in foreign countries that are competing with him, because of his nearness to the demand centers of his own markets. But this advantage of nearness to markets alone is not sufficient to place German agriculture on a plane of prosperity comparable with the enviable position it occupied before the war, because the methods that the German farmer must employ to force production from his inferior soils are too expensive to admit of his successfully competing with the farmers of the Argentine or the Black Sea countries or perhaps even with North America, handicapped though the latter are by long ocean transportation. Before the war the German farmer was able to compete successfully with farmers of other lands, largely because German agriculture was protected by a tariff adopted as a means of national defense.

The farmers of America are vitally interested in the development of this whole situation, which will result in the return of Germany to a position of balanced agriculture that produced 89.7 per cent of the country's meat requirements, 64.2 per cent of the fat requirements, and 84.2 per cent of the cereal requirements; or which will continue, or even further depress, the present situation of a subordinated agriculture, producing in 1924 only 64.4 per cent of the country's meat requirement and in 1923–24 only 61.6 per cent of the requirements [a] of wheat, rye, barley, and oats.

In discussing the present situation the basic relationships of German agriculture to the economic welfare of the Republic of Germany should be considered from two points: (1) The relationships of German agriculture to the State as affected by the territorial changes brought about by the treaty of Versailles; and (2) those relationships as affected by the series of crises through which German agriculture has passed during the World War and the postwar years.

The relationships of German agriculture to the economic welfare of the country were not directly affected to any considerable extent by the changes in territory brought about by the treaty of Versailles, except in the cases of rye, the beet-sugar industry, and, to a less extent, the meat industry. It is true that this whole subject of the effect of the territorial changes brought about by the treaty of Versailles upon the German agricultural situation is largely a matter of hypothesis and estimation, but at the same time such approximations as may be made are suggestive. In Table 2 the pre-war status of the Empire and the territories now comprising the Republic are contrasted on a basis of the percentage relationship that the difference between the production and disappearance of farm crops within the two areas bears to the production and disappearance within the former Empire:

TABLE 2.—*Cereals and potatoes, average, 1909–1913; and sugar, 1912–13: Pre-war production and disappearance in the German Empire compared with that within the present boundaries of the Republic*

Crop	Per 100 inhabitants [1]							
	Net production 1909–1913				Disappearance 1909–1913			
	Pre-war boundaries	Boundaries of 1923	Difference		Pre-war boundaries	Boundaries of 1923	Difference	
	Bushels	*Bushels*	*Bushels*	*Per cent*	*Bushels*	*Bushels*	*Bushels*	*Per cent*
Wheat	215.0	209.0	−6.0	−2.8	321	315	−6	−1.9
Rye	627.6	583.6	−44.0	−7.0	588	565	−23	−3.9
Barley	226.3	214.7	−11.6	−5.1	[2] 444	[2] 459	+15	+3.4
Oats per head of horses [3]	119.9	128.0	+8.1	+6.8	122	130.4	+8.4	+6.9
Potatoes	2,212.6	2,027.9	−184.7	−8.3	2,229	2,030	−199	−8.9
	Net production 1912–13				Disappearance 1912–13			
	Pounds	*Pounds*	*Pounds*	*Per cent*	*Pounds*	*Pounds*	*Pounds*	*Per cent*
Sugar, estimated, per capita	[4] 91.9	[4] 83.8	−8.1	−8.8	[5] 47.1	[6] 48.9	+1.8	+3.8

[1] Population: Pre-war boundaries (1910), 64,926,000; boundaries of 1923 (1910), 57,800,000.
[2] Net production plus total imports for the Empire. (See text.)
[3] Number of horses: Pre-war boundaries (1913), 4,558,000; boundaries of 1923 (1913), 3,807,000.
[4] Includes 81,620,000 short tons made from molasses. These figures are approximations based upon the data for the season 1912–13.
[5] Deutsche Zuckerindustrie, vol. 48, No. 6, Feb. 9, 1923, p. 76.
[6] It is probable that the rate of disappearance in the territories now composing the Republic was greater than is indicated here and in Table 47, p. 64.
[a] Based on pre-war normal average per capita consumption (1909–1913) and population of 1924 for meats and of 1923 for cereals.

From Table 2 it is seen that the per capita rates of production of the farm crops itemized were considerably less during 1909–1913 in the territories now comprising the Republic than they were for the whole Empire, except in the case of oats, which were produced at a higher rate per horse in the territory of the Republic, but the following items must be considered:

Potatoes were imported into the Empire during the pre-war period 1909–1913 at the rate of 10,874,000 bushels annually. Of this quantity only about 1,400,000 bushels were required to cover the statistical deficit of the territories of the present Republic; over 9,000,000 bushels more potatoes were utilized (see Table 38, p. 56) than were produced in the segregated districts.

Wheat was imported at the rate of 68,700,000 bushels annually, of which about 7,300,000 bushels were shipped to the segregated districts—particularly Alsace-Lorraine—to balance local deficits (see Table 22, p. 34) and the per capita disappearance was less in the territories of the Republic than in the Empire as a whole.

Rye: The former German Empire was a rye-exporting country, shipping abroad each year (1909–1913) an average of about 25,600,000 bushels. Of this exportable surplus approximately 15,000,000 bushels were produced in the districts segregated by the Versailles treaty from the territories now composing the Republic. (See Table 26, p. 41.) This loss in rye is offset somewhat by the gain in wheat. It is probable that the net cereal loss resulting from the provisions of the Versailles treaty may be placed roughly at 8,000,000 to 10,000,000 bushels.

Barley was imported at the rate of 141,500,000 bushels annually. The segregated districts produced a small surplus (see barley situation, p. 47), which was shipped to the territories of the present Republic, where a quantity of barley was fed to livestock equivalent to the total imports of the Empire plus the small surplus from the segregated districts. This surplus, compared with the total imports, was not sufficient to affect German agriculture materially.

Oats were imported annually at the rate of 9,700,000 bushels net. (See Table 34, p. 51.) It is estimated that about 600,000 bushels more than the small surplus produced in the segregated districts were required to cover the statistical deficit of the Saar.

Sugar.—During the season 1912–13 Germany exported about 1,166,000 short tons of raw sugar, of which approximately 400,000 short tons originated in the segregated districts. (See Table 44, p. 61.) Probably about one-half of the average (1909–1913) exportable sugar surplus of 953,000 [3] short tons originated in the segregated districts, which meant a corresponding loss to Germany's international trade balance sheet.

Livestock.—Based upon the enumeration of animals on December 1, 1913, and the population of 1910, the percentage difference between livestock per 1,000 inhabitants in the territories within the boundaries of the Republic as compared with the Empire as shown below is even less than the difference in field crops. (See Table 2, p. 5.)

	Per cent difference
Horses	−5.7
Swine	−1.3
Cattle	−.9
Sheep	−1.2
Total foregoing livestock	−1.3
Fowls	−1.7

Approximating the hay consumption of sheep and goats at one-seventh that of mature horses or cattle, the hay supply of the livestock of the Empire during 1909–1913 was on the average 2,983 pounds per head, against 3,016 pounds per head in the territories now comprised within the Republic.

[3] Average of sugar season Sept. 1, 1908, to Aug. 31, 1913.

The difference between the pre-war per capita relationship of livestock and the availbale quantity of forage per head of livestock in the Empire and in the territories now constituting the Republic was not great. However, meat was produced at a relatively lower rate in the Republic than in the Empire. At least 200,000,000 pounds of meats were shipped to the interior districts annually from the districts that were later segregated by the Versailles treaty. (See Table 59, p. 79.)

The conclusion seems to be that had other factors remained unchanged, the total effect of the territorial changes brought about by the Versailles treaty would have been to reduce Germany's net exportable cereal surplus by not more than 10,000,000 bushels and the exportable sugar surplus by not more than 500,000 short tons and to increase meat imports by about 100,000 short tons. The relative situation of other agricultural products in the Republic would have remained practically the same as it had been in the Empire.

THE PRESENT CRISIS IN GERMAN AGRICULTURE

The reversal of the preferential agricultural tariff and legislation unfavorable to agriculture, the chaotic economic conditions following the war, and the influx of cheap agricultural products from American and other overseas countries have tended to cause German farmers to reduce the production of marketable surpluses and to restrict their operations to a basis more nearly approaching self-sufficiency. The disproportion between the price that the farmer has received for his products and the price that he has had to pay for labor and the goods that he has required for the development of his business has been so great that he has not been able to obtain the cost of production on the poorer soils and, as a consequence, millions of acres of submarginal lands have gone out of cultivation.

The feeding of livestock in Germany has always been restricted to a great extent to the quantities of feeding stuffs that could be produced at home, in addition to which large quantities of feeding barley, fish meal, oil cake, and other concentrates and cereals have had to be imported. The degree to which such feeds could be used with profit was restricted by their cost and the market price of meat. Although in recent years the areas devoted to hay, fodder beets, and potatoes have been increased above pre-war levels, the increased quantities of feeding stuffs thus produced at home have not been sufficient to maintain cattle and swine on German farms up to their pre-war numbers, and meat and fat prices have not been high enough to enable the German farmers to import foreign concentrated feeding stuffs on a basis profitable to meat production.

Added to these handicaps affecting the profitable production of marketable surpluses, the German demand for agricultural products has fallen off sharply as a result of the inability of the masses of the German people to maintain themselves at their former high standard of living. As Professor Sering states:

> Germany is exporting, expressed in terms of gold, only one-half of her pre-war volume. * * * Germany's ability to provide herself with the means of subsistence is correspondingly curtailed. The farmer of great exporting territories, therefore, is the victim of the central European collapse. The purchasing power of his wheat and of his cattle in exchange for industrial goods has been reduced approximately to from 50 to 70 per cent of its pre-war power because of the depreciated equivalent which Germany is able to offer. * * * The disparity

of prices, and with it the distress of the farmers, is almost everywhere being augmented by legislation and especially by high protective tariffs. (Max Sering, "The International Agrarian Crisis," Journal of Farm Economics, October, 1924, pp. 341, 342.)

SUPPLIES OF CEREALS AND POTATOES

From the data in Table 3 it is seen that since the war Germany has subsisted on supplies of cereals far below the pre-war average, which amounted to 1,270,709,000 bushels in 1909–1913, as against 835,080,000 bushels in 1921–22, 662,497,000 bushels in 1922–23, and 890,925,000 bushels in 1923–24.

TABLE 3.—*Potatoes and cereals: Supplies in Germany*

[In thousands of bushels—000 omitted]

Crop	Boundaries of 1923				
	Average, 1909–1913	1921–22	1922–23	1923–24	1924–25
Domestic production less seed: [1]					
Potatoes	1,172,135	766,358	1,294,182	996,700	1,132,740
Rye	337,345	241,606	180,742	236,386	199,573
Wheat	120,815	98,471	63,021	96,864	79,790
Barley	124,088	92,764	72,101	99,486	100,227
Oats	487,112	311,044	242,451	385,027	351,888
Imports less exports:					
Potatoes	[2] 1,363	1,376	2,936	[3] 8,478	
Rye	[3] −10,701	4,738	42,114	24,877	
Wheat	[2] 61,415	69,293	42,053	29,590	
Barley	[4] 141,475	10,911	13,006	23,072	
Oats	[2] 9,160	6,253	7,009	[5] −4,377	
Total supply:					
Potatoes	1,173,498	767,734	1,297,118	1,005,178	
Rye	326,644	246,344	222,856	261,263	
Wheat	182,230	167,764	105,074	126,454	
Barley	265,563	103,675	85,107	122,558	
Oats	496,272	317,297	249,460	380,650	

[1] Probably the pre-war production was overestimated and post-war production underestimated
[2] Average statistical deficit.
[3] Average statistical surplus.
[4] Net imports for total German Empire; statistical deficit probably greater than imports for total empire.
[5] Net exports.

Before the war the territories now composing the Republic of Germany produced 84.2 per cent and imported 15.8 per cent (net) of the total supply of rye, wheat, barley, and oats.

In 1923–24 there was a bumper crop. Production amounted to 91.8 per cent and net importations only 8.2 per cent of the total supplies of these four cereals.

Total supplies of cereals available for consumption in Germany during the pre-war period 1909–1913 averaged 1,270,709,000 bushels, against 890,925,000 bushels in 1923–24, a falling off of 29.9 per cent.

Germany's pre-war cereal supplies amounted to 22 bushels per capita. In 1923–24 the per capita allowance of the population of 62,275,000 amounted to only 14.3 bushels, or 65 per cent, of the pre-war normal.

The great reduction in the post-war supplies of potatoes and cereals as compared with the pre-war normal is indicated in Table 4.

TABLE 4.—*Potatoes and cereals: Supplies in Germany, expressed as percentages of estimated requirements, based on normal pre-war disappearance*

Crop and year	Boundaries of 1923			Crop and year	Boundaries of 1923		
	Domestic production less seed	Net imports	Total supply		Domestic production less seed	Net imports	Total supply
1909–1913:	*Per cent*	*Per cent*	*Per cent*	1923–24:	*Per cent*	*Per cent*	*Per cent*
Potatoes	99.9	[1] 0.1	100.0	Potatoes	78.8	.7	79.5
Rye	103.3	[2] −3.3	100.0	Rye	67.2	7.1	74.3
Wheat	66.3	[1] 33.7	100.0	Wheat	49.3	15.1	64.4
Barley	46.7	[1] 53.3	100.0	Barley	34.8	8.0	42.8
Oats	98.2	[1] 1.8	100.0	Oats	80.0	[3] −0.9	79.1
1921–22:				1924–25:			
Potatoes	61.8	0.1	61.9	Potatoes	88.8		
Rye	70.0	1.4	71.4	Rye	56.2		
Wheat	51.2	36.0	87.2	Wheat	40.3		
Barley	33.1	3.9	37.0	Barley	34.7		
Oats	65.1	1.3	66.4	Oats	73.1		
1922–23:							
Potatoes	103.2	0.2	103.4				
Rye	51.8	12.1	63.9				
Wheat	32.4	21.6	54.0				
Barley	25.4	4.6	30.0				
Oats	50.3	1.5	51.8				

NOTE:—Table 4 is derived from Table 3 by dividing the supplies of each commodity by a calculated normal requirement, based on pre-war per capita consumption multiplied by the estimated population in each year.

[1] Average statistical deficit. [2] Average statistical surplus. [3] Net exports.

SUPPLIES OF MEATS, FATS, AND OILS

The data relative to the production of meats, fats, and oils in Germany are largely approximations, based upon estimates made from official and trade figures. The Fach-Ausschussess fur Fleischversorgung estimates that the available supplies of beef, veal, pork, mutton, goat, horse, and dog flesh in 1923 were 46.4 per cent of the 1912 supply for the whole Empire. In Table 59, page 79, the estimates indicate that the supplies of all meats in 1923 were 53.5 per cent of the 1912 supply for the Empire and 60.1 per cent of the estimated supply for the territories now composing the Republic, which amounted to approximately 4,043,000 short tons in 1912, as compared with 2,980,000 short tons in 1921, 2,845,000 short tons in 1922, 2,429,000 short tons in 1923, and 3,360,000 short tons in 1924. (See Table 5, p. 10.)

TABLE 5.—*Meats, fats, and oils: Approximate supplies in Germany, 1921–1924, compared with 1912*

[In thousands—000 omitted]

Commodities	Boundaries of 1923				
	1912	1921	1922	1923	1924
Meats:					
German production—	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Beef and veal	2, 164, 587	1, 729, 498	1, 800, 078	1, 159, 900	1, 906, 543
Pork	3, 968, 159	2, 328, 708	2, 326, 834	2, 022, 100	2, 896, 869
Other meats	948, 407	907, 688	1, 022, 636	837, 365	857, 137
Total	7, 081, 153	4, 965, 894	5, 149, 548	4, 019, 365	5, 660, 549
Imported supplies—					
Beef and veal	[1] 144, 500	[2] 67, 627	112, 326	182, 648	235, 605
Pork	[1] 167, 619	223, 695	98, 214	142, 716	143, 947
Other meats	[1] 693, 598	702, 131	329, 840	513, 348	680, 792
Total	[1] 1, 005, 717	993, 453	540, 380	838, 712	1, 060, 344
Total produced and imported—					
Beef and veal	2, 309, 087	1, 797, 125	1, 912, 404	1, 342, 548	2, 142, 148
Pork	4, 135, 778	2, 552, 403	2, 425, 048	2, 164, 816	3, 040, 816
Other meats	1, 642, 005	1, 609, 819	1, 352, 476	1, 350, 713	1, 537, 929
Total, all meats	8, 086, 870	5, 959, 347	5, 689. 928	4, 858, 077	6, 720, 893
Fats and oils:					
German production—					
Animal fats and oils	2, 133, 000	1, 353, 000	1, 368, 000	1, 350, 000	[3] 1, 350, 000
Vegetable fats and oils	59, 000	88, 000	88, 000	88, 000	[3] 88, 000
Total	2, 192, 000	1, 441, 000	1, 456, 000	1, 438, 000	[3] 1, 438, 000
Imported supplies—					
Animal fats and oils	474, 000	443, 000	272, 000	396, 000	512, 000
Fish fats and oils	75, 000	64, 000	137, 000	97, 000	73, 000
Vegetable fats and oils	734, 000	750, 000	959, 000	661, 000	525, 000
Total	1, 283, 000	1, 257, 000	1, 368, 000	1, 154, 000	1, 110, 000
Total produced and imported—					
Animal fats and oils	2, 607, 000	1, 796, 000	1, 640, 000	1, 746, 000	1, 862, 000
Fish fats and oils	75, 000	64, 000	137, 000	97, 000	73, 000
Vegetable fats and oils	793, 000	838, 000	1, 047, 000	749, 000	613, 000
Total, all fats and oils	3, 475, 000	2, 698, 000	2, 824, 000	2, 592, 000	2, 548, 000

[1] Includes meats brought from other parts of the Empire.
[2] Does not include corned beef.
[3] 1924 production figures are not available; assumed to equal that of 1923.

Before the war (1912) the territories now composing the Republic of Germany produced approximately 87.6 per cent and imported (net) 12.4 per cent of its total supply of all meats.

In 1924 production approximated 84.2 per cent and net importations 15.8 per cent of the total available supplies.

In 1924 production of meats had fallen to approximately 80 per cent of the 1912 estimates and importations had risen to approximately 105 per cent. The total supply was 83 per cent of the total supply of 1912, but because of increased population was only 76.5 per cent of the total requirement of the inhabitants based upon prewar consumption rates.

There has been a considerable reduction in potential supplies of meats in Germany ever since the beginning of the war. No information is available to show how low supplies fell during and immediately after the war, but there have been some improvements since 1918. The best available data indicate that for the year 1921 the per capita supply of meats was 69.7 per cent of the supply in 1912, and for 1922

65.9 per cent of the pre-war figure. During 1923 supplies appear to have fallen still further, to only 55.7 per cent of those available in 1912. During the past year (1924) slaughterings of both cattle and swine have been greater than during the previous season, following the stabilization of the mark and the consequent heavier marketing of livestock by the German farmers. Because of better conditions of financing international trade during 1924, importations of beef have been almost one-third greater than during 1923. Although the total supplies of meats in Germany in 1924 were more than one and one-half billion pounds greater than in 1923, the per capita supply was still only 76.5 per cent of the pre-war per capita requirement.

The percentages of estimated normal requirements in Table 6 are only approximations, indicating the trend of production and supply in recent years as contrasted with the year 1912.

TABLE 6.—*Edible meats and fats: Supplies in Germany, expressed as percentages of estimated normal requirements, 1921–1924, as compared with 1912*

Commodity and year	Boundaries of 1923			Commodity and year	Boundaries of 1923		
	Domestic production	Net imports	Total supply		Domestic production	Net imports	Total supply
1912				1922—Continued			
Meats:	*Per cent*	*Per cent*	*Per cent*	Fats:	*Per cent*	*Per cent*	*Per cent*
Beef and veal	96.7	[1] 3.3	100.0	Animal	49.1	9.8	58.9
Pork	99.0	[1] 1.0	100.0	Fish	.....	170.6	170.6
Other meats	56.3	[1] 43.7	100.0	Vegetable	10.4	113.4	123.8
Total meats	89.7	10.3	100.0	Total fats	39.2	36.9	76.1
Fats:				1923			
Animal	83.4	[1] 16.6	100.0	Meats:			
Fish	.....	[1] 100.0	100.0	Beef and veal	46.7	7.3	54.0
Vegetable	7.3	[1] 92.7	100.0	Pork	45.3	3.2	48.5
Total fats	64.2	35.8	100.0	Other meats	47.3	29.0	76.3
1921				Total meats	46.1	9.6	55.7
Meats:				Fats:			
Beef and veal	71.0	2.8	73.8	Animal	48.1	14.1	62.2
Pork	53.3	5.1	58.4	Fish	.....	119.8	119.8
Other meats	52.3	40.5	92.8	Vegetable	10.3	77.5	87.8
Total meats	58.1	11.6	69.7	Total fats	38.4	30.8	69.2
Fats:				1924			
Animal	49.1	16.1	65.2	Meats:			
Fish	.....	80.6	80.6	Beef and veal	76.1	9.4	85.5
Vegetable	10.5	89.7	100.2	Pork	64.4	3.2	67.6
Total fats	39.3	34.3	73.6	Other meats	48.0	38.2	86.2
1922				Total meats	64.4	12.1	76.5
Meats:				Fats:			
Beef and veal	73.1	4.5	77.6	Animal	47.6	18.1	65.7
Pork	52.6	2.2	54.8	Fish	.....	89.4	89.4
Other meats	58.3	18.8	77.1	Vegetable	10.2	61.0	71.2
Total meats	59.6	6.3	65.9	Total fats	38.1	29.4	67.5

[1] Deficit in domestic supply estimated from per capita consumption.

Germany's inability to regain more rapidly her pre-war status in meat production has been due very largely to the problem of feeding stuffs. It is significant that hay supplies have increased from 3,016 pounds per head, the average of 1909–1913, to 3,272 pounds in 1924, calculated on the basis of consumption of large mature animals (see

p. 67), while the area planted to fodder roots has expanded greatly in order to increase animal production through the feeding as far as possible of home-grown crops. But these home-grown feeding stuffs are insufficient, more particularly since the abandonment of cereal acreage has cut down straw supplies enormously.

Authorities estimate that before the war fully 40 per cent of Germany's milk and butter production was based upon the use of foreign barley, oil cake, and other concentrates, importations of which averaged about 8,000,000 short tons in 1912 and 1913. Since the war Germany has been unable to import more than 25 to 30 per cent of the quantities of these foreign feeding stuffs that had been imported before the war. Meat and animal-fat production have been correspondingly curtailed.

One of the factors with which German meat producers may have to reckon is the development of the meat industry in the Argentine. Before the war Germany imported an average of 1,764 pounds of frozen beef from Argentina: in 1921–22, 5,600,000 pounds; in 1922-23, 23,400,000 pounds; in 1923–24, 115,700,000 pounds. Although this importation of the last fiscal year is only about 6 to 7 per cent of the total beef and veal production of the calendar year 1924, the fact that the German people are eating greater quantities of cheap frozen beef than formerly is significant and may prove a factor to be taken into serious consideration.

The increased buying ability of the city dwellers during the past year in Germany is reflected in the increased importations of butter, which were 2,000,000 pounds in 1922, 3,000,000 pounds in 1923, and 118,000,000 pounds in 1924, of which Denmark supplied nearly 59,000,000 pounds, withdrawing this quantity from the offerings she would otherwise have made on the United States markets.

Domestically produced fats in Germany are chiefly of animal origin, although a relatively small quantity of vegetable oil is produced from domestic seed. A very large quantity of vegetable fats and oils is imported or produced from imported oil-bearing materials. The oil crushers and margarine manufacturing industries were both seriously disorganized in 1923, but recovered toward the end of the year and handled, including linseed, about 600,000 short tons of imported oil-seeds, while in 1924 they crushed fully 800,000 short tons of imported seeds, as compared with 1,900,000 short tons in 1913.

Before the war the territories now composing the Republic of Germany produced nearly two-thirds of the total requirements of fats and oils. Domestic supplies in 1912 were about 2,200,000,000 pounds, or 37.9 pounds per capita, of which 97.3 per cent were animal fats. Probably not more than 25 per cent of the animal fats were actually rendered, the remainder being sold with the meat. Of the supplies imported, practically 57 per cent were in the form of vegetable-oil materials. The remainder consisted of animal and fish fats, of which lard imported from the United States was an important item.

With the outbreak of the war there was a substantial reduction in available supplies of fats, and a shortage has prevailed ever since. The best available data indicate that for the year 1921, the total per capita supply of fats was 74 per cent of the supply in 1912 and that during 1922 it rose to 76 per cent but in 1923 declined to about 69 per cent. The decrease in 1923 is almost entirely due to smaller

importations of vegetable oils and oil materials which resulted from disorganization of the oil industries. The fat yield per hog is now equal to pre-war yield, and the fat content of beef carcasses is nearly back to normal. German production of hog fat was actually greater in 1923 than in 1922, and it seems probable that production of beef fat, including home slaughter, has fallen only very slightly, if at all.

In 1924 the supplies of animal fats rose to 29.6 pounds per capita, against 28 pounds in 1923; but total fats fell from 41.6 in 1923 to 40.6 in 1924, being 67.5 per cent of the fat and oil supplies that Germany would require if the population utilized the normal pre-war disappearance.

Summarizing in tabular form the situation of German agriculture in its relation to the food requirements of the nation, we have the following:

TABLE 7.—*Production, import, and per capita supply of specified commodities in Germany, 1923 boundaries, 1924, as compared with pre-war*

Commodity	Percentage of pre-war		
	Production	Importation	Per capita supply
	Per cent	*Per cent*	*Per cent*
Potatoes [1]	85.0	622.0	79.3
Cereals [1]	76.5	36.3	65.0
Meats [2]	79.9	105.4	76.4
Fats [2]	65.6	86.5	67.6
Sugar [3]	52.2	[4] 37.8	[5] 63.4

[1] Years ended June 30, 1924, compared with average, 1909–1913; 1923 population used in computing 1924 per capita supply.
[2] Compared with 1912.
[3] Years ended Aug. 31; 1924 compared with season 1912–13
[4] Export.
[5] Disappearance.

From Table 7 it is seen that the production of potatoes and meats has tended to remain at higher levels than cereals, fats, or sugar. Imports of potatoes and meats have also remained relatively high, so that despite increased population the per capita allowance of the German people is but 20.7 per cent below pre-war per capita allowance in the case of potatoes and 23.6 per cent in the case of meat.

Lesser quantities of potatoes are being manufactured into alcohol and greater quantities are being consumed as food than formerly. Potatoes are used to a great extent to make up the shortage in cereals, the production of which in 1924 was 76.5 per cent, while importations fell to 36.3 per cent and the per capita allowance was only 65 per cent of pre-war normals. Importations of fats have been relatively greater than in the case of cereals, but production has been less and the per capita allowance was only 67.6 per cent of normal in 1924.

With the reorganization of German industry, the purchasing power of the German people will be greatly increased and there will be a stronger demand for the necessaries of life. As German agriculture is near to the demand centers, it should profit by the new prosperity of the cities and industrial centers with a consequent return toward the former relatively high production capacity of rural Germany.

But new factors have entered into the problem. New trade channels have been opened up, the people of the cities have accustomed themselves to new dietary standards, and new policies of State are being considered.

There is a possibility that the agriculture of Germany may not soon regain its former status but that, like Great Britain, an industrialized Germany may depend more and more upon surplus-producing countries overseas to supply its people with food and its industries with raw materials. In this case the demand for American agricultural products may remain as it now is or may somewhat increase.

GERMANY AS A MARKET FOR AMERICAN AGRICULTURAL PRODUCTS

If the analysis (see pp. 104 to 110) is correct, we may expect a market in Germany in the next few years of readjustment for at least 800,000 or 900,000 bales of cotton annually, valued at approximately $100,000,000, and for double that quantity in years of heavy production and moderate prices. The German market for American grain for bread and for feed depends largely on competition from other sources of supply, with Russia as the most formidable potential competitor. Pork products and fats will be taken by Germany when prices are relatively low. Even in periods of higher prices there may easily be a market in Germany for as much lard as in pre-war years. This would mean an export value of perhaps $30,000,000. However, the bacon and ham trade is not likely to be maintained at the high levels reached during the period of German currency inflation. Tobacco will continue to be exported from the United States to Germany to the value of from $3,000,000 to $4,000,000 annually. In favorable seasons, such as in 1924–25, the value of German imports of American agricultural products will exceed the pre-war average, but the apparent tendency is for the average of the next few years to be somewhat below the average of 1910–1914. However, if Germany continues its industrial development with continued increases in population, it will obviously be necessary before many years for the industrial population to draw to a greater extent than ever before upon foreign sources of supply for its foodstuffs and other agricultural products.

PHYSICAL CHARACTERISTICS OF THE REPUBLIC OF GERMANY[4]

The present German Republic consists of what remains of the former German Empire after segregating from the central districts Alsace-Lorraine, returned to France; a small area called the Eupen-Malmedy district, ceded to Belgium; northern Schleswig, ceded to Denmark; a small part of Pomerania, the greater part of West Prussia and Posen, parts of Upper and Lower Silesia and East Prussia, incorporated in the newly formed Republic of Poland; the Memel district of East Prussia and Danzig, placed in charge of the allies; and a small area in Upper Silesia, ceded to Czechoslovakia. In addition there is a plebiscite area in the Saar Basin whose fate is to be settled 15 years after the signing of the treaty of Versailles. In the following report all of these segregated districts are collectively designated as the "ceded territories." (Fig. 2.)

[4] Summary based on statement by Doctor Opitz, of the Berlin Landwirtschaftliche Hochschule.

The Republic of Germany, as constituted by the treaty of Versailles, has a total area of 181,524 square miles, or is about the size of Colorado and Wyoming. It has a population (1924 estimate) of 62,825,000, or 346 per square mile.

Germany lies between the forty-seventh and the fifty-fifth degrees of north latitude, or about the same distance from the Equator as the Canadian Province of British Columbia.

Topographically the country may be considered as divided into two nearly equal parts, the highland region in the south and west and the lowland plain of the north and east. The mountainous region may be said, roughly, to include southern Silesia, southern Free State

FIG. 2.—Map of Germany, showing ceded areas

Germany ceded away 27,240 square miles of territory, while the Saar plebiscite includes 744 additional square miles, totaling 13.4 per cent of the former German Empire. The ceded territories of Posen and West Prussia include some of the richest surplus producing agricultural lands, while most of the other ceded territories were agricultural deficit regions. The net effect of the territorial changes brought about by the Versailles treaty was to increase the dependence of Germany upon foreign sources of agricultural supplies

Saxony, Thuringia, half of the Province of Saxony, Westphalia, and the Rhineland, and all the region to the south and west of these Provinces.

Practically all the northern portion of the country lies in the great European plain, across which the Rivers Oder, Elbe, and Rhine flow from the highlands of the south in a general northwest direction to the Baltic and German Seas. The German portion of the European plain is only slightly above sea level, with occasional minor variations, relics of ancient moraines. The soil is chiefly of medium or light sand, excellent for rye or potatoes. In some districts a good loam prevails and in the river valleys a medium to heavy alluvial soil predominates. The heavy clays and loams of the sea marshes are much more fertile than the other lighter soils. In

the north there are extensive moors, of little or no tillage value, but when drained provide excellent pasturage, so that this section of the country is characterized by its dairy industry.

The temperature of the western part of the German plain, near the North Sea, is markedly oceanic in character, with cool summers, mild winters, and a long growing season. In the neighborhood of the Baltic Sea the oceanic type of climate is much less noticeable. Farther east, in East Prussia and in Upper Silesia, the climate is colder and more inclement, approaching the continental climate of Russia. The seasonal variations and the daily ranges of temperature are also greater. In East Prussia and eastern Silesia late frosts must be expected until in May, and fall frosts begin as early as September. The annual rainfall of most of the plains region is about 22 inches (55 millimeters). In East Prussia, however, and in the coastal regions, particularly along the North Sea, precipitation is much heavier. Some of the valleys of east Germany are drier, receiving only 16 to 18 inches (40 to 45 millimeters). In western Germany there is likely to be a dry period in May and June, but in the east the seasonal lack of rain is more pronounced, sometimes very materially decreasing the grain yields in the eastern provinces. The heaviest precipitation usually occurs in July and August.

These natural conditions in the plains area lead to farming on an extensive scale, over 60 per cent of the total agricultural area being in farms over 45 acres in extent and about 30 per cent being in farms over 247 acres (100 hectares) in extent. In the sandy soil of the plains, rye is the principal grain crop and potatoes the chief hoed crop.

In the highland district of the south the greatest altitudes are found in the south Bavarian Lower Alps, where the mountains reach a height of 6,500 feet (2,000 meters) or more above sea level. The south Saxon ore-bearing mountain chains, which practically coincide with the southeastern political boundary of the country, can be classified as secondary mountains, with altitudes of from 3,250 to 5,200 feet (1,000 to 1,600 meters). The central German highlands, including the Hartz Mountains, are also considered as part of the general highland region.

The soil of the highlands is predominantly clay, although a great variety of soils is to be found. The temperature of the southern and eastern parts of the region is characterized by warm summers and long, cold winters, giving a comparatively short growing season. Rye can be grown in altitudes as high as 3,250 feet (1,000 meters) but wheat is a profitable crop scarcely beyond 1,600 feet (500 meters). There is considerable danger of frost in the spring until in May, and in the fall, frosts begin in September. Toward the northwestern part of the highland region the influence of the ocean is felt. The summers are cooler, the winters milder, and the growing season comparatively long. The rainfall in the mountains of the southeastern part of the region averages about 48 to 56 inches (1,200 to 1,400 millimeters) but in the lower region about 24 to 28 inches, with the exception of a drier area in Anhalt and part of the province of Saxony known as the region of the "rain shadows" of the Hartz Mountains. There the annual rainfall is in the neighborhood of 16 to 18 inches (400 to 450 millimeters) a year. The mountains in the west and south of the highland region have a rainfall of from 50 to 80 inches and more.

The valleys and lowlands are much drier, receiving between 24 to 40 inches. Some districts along the Rhine have a rainfall of only 16 to 24 inches.

The broken topography of the mountain regions naturally leads to the small-farm type of agriculture, over two-thirds of the agriculturally used area being in farms less than 45 acres in extent. The grazing areas of the hills furnish natural forage crops, rendering livestock production a profitable enterprise, not only for meat but for draft animals as well. On the small farms of Germany the use of oxen is still found to be fairly profitable. Although the fertile soil of the highlands is advantageous for wheat growing and wheat is one of the important crops of southern and western Germany, rye is grown extensively, especially where the soil for any reason is not well adapted to wheat or where the climate is too rigorous. Barley is much more important in this region than in the plains. Root fodder crops are important in supplementing the natural pastures. In the "rain-shadow" district of the Hartz Mountains around Magdeburg the dry climate combined with a fertile soil is very favorable to sugar-beet production, and the sugar industry is well developed in this region.

DEVELOPMENT OF GERMAN AGRICULTURE BEFORE THE WAR

Comparing the acreage and production of Germany in 1880 with the average acreage and production during the period 1909–1913 in the Empire of Germany, we find astonishing increases in production, as indicated in Table 8:

TABLE 8.—*Cereals and potatoes: Production and acreage during 1880, as compared with the pre-war average, 1909–1913*

[In thousands—000 omitted]

Crop	1880		Average 1909–1913	
	Acres	*Bushels*	*Acres*	*Bushels*
Wheat	4,485	86,461	4,768	152,119
Rye	14,630	195,709	15,387	445,222
Spelt	952	26,970	707	23,529
Total bread cereals	20,067	309,140	20,862	620,870
Oats	9,250	292,289	10,730	591,996
Barley	4,013	98,731	4,092	158,517
Total cereals	33,330	700,160	35,704	1,371,383
Potatoes	7,180	716,962	8,251	1,681,959

The great increase in production per unit of area was effected by improvement and intensification of methods and by the extended use of fertilizers. The average production of potatoes (1909–1913) was more than double that of 1880, whereas the increase in area planted was only 14.9 per cent. Cereal areas were increased but 7.1 per cent, whereas production nearly doubled, the increase being 95.9 per cent comparing the total production in 1880 with the average for 1909–1913.

Agricultural development during these 30 years was stimulated by Germany's great industrial growth, attended by an increasing demand for foodstuffs and agricultural raw materials. German agriculture was bound to reap a profit from this expansion of industry and the

growth of cities, if for no other reason, because of nearness to markets. In addition, still greater benefits were bestowed upon German agriculture by a friendly tariff.

The population grew from 45,222,113 in 1882 to 64,925,993 in 1910.

The increased buying power which was passed on to the farmer from the industrial sections by higher prices received at the farm made remunerative the expensive intensive methods that were employed.

The more immediate factors which contributed to German agricultural prosperity should include: (1) Greatly increased use of commercial fertilizers;[5] (2) large livestock production built up to a great extent on imported feedstuffs, contributing to increase soil fertility; (3) application of scientific methods of seed selection, tillage, crop rotation, and farm management;[6] and (4) a cheap supply of competent labor and the introduction of labor-saving machinery.[7]

AGRICULTURAL TARIFF

The German agricultural tariff which was first applied in 1879 and which was frequently increased gave great impetus to agricultural development. By a drawback system some products received what amounted to a bonus on export, as well as protection in home markets. This accounts, to a large extent, for the remarkable expansion in rye production, especially in northeastern Germany. It also accounts for the large export rye balance at a time when Germany was really a deficit grain-producing country. This rye-tariff policy was a happy one for the eastern farmer because the growing home demand was for wheat, whereas the land in the east was particularly suitable for rye.

This tariff also made possible a good margin of profit in the feeding of animals for slaughter on account of the relationship of the tariff

[5] The extensive use of potash in Germany as contrasted with its use in the United States is given in the following:

Potash use per 100 acres, in pounds

Year	Germany	United States
1895	152.2	18.0
1900	298.3	34.6
1905	514.3	58.0
1910	914.6	130.3
1913	1,364.4	106.8

Source: Krische, Paul, Das Kali, * * * Stuttgart, Verlag von Ferdinand Enke, 1923, Teil I.

The large importations of barley, oil cake, and other feeding stuffs meant, in a large sense, an importation of fertilizer. Several estimates that agree quite closely indicate that animal fertilizer was fully as important as the commercial.

[6] Regarding the application of scientific methods of farming in Germany volumes might be written. By such methods as seed selection, crop rotation, etc., a great deal was undoubtedly accomplished which did not greatly increase production costs. The intensive cultivation for the most part, however, caused a direct increase in costs and was profitable only because of the remunerative prices received for commodities. For instance, rye and wheat were cultivated during the growing season as corn is cultivated in America. Fields were often plowed three or four times per year and green manure, sown after early crops, was plowed under.

[7] The resident rural population decreased during this period of development, but a large seasonal labor supply was imported each year. This began with a small seasonal migration from the east to take care of Saxony's sugar-beet crop. The term "Saxon Ganger" is a very old one. This yearly migration so developed that, just before the war, about 400,000 Poles yearly migrated to Germany. They returned to Poland when the work was finished, and were consequently not included in the statistics of agricultural population. Such labor was not only imported into Saxony but into all central and northeastern territory. The introduction of agricultural machinery from abroad and the development of the farm implement manufacture within Germany itself did much to lower the cost of production.

on feedstuffs to those applying to meat. The farmer obtained his foreign-grown feeding barley under a low-tariff schedule, while at the same time he was able to protect home-grown brewing barley by a higher schedule. This was possible because German barley, being a brewing type, was heavier; and it was possible, consequently, to differentiate on the basis of weight per measured bushel between feeding and brewing barley.

SOME OF THE PRACTICAL EFFECTS OF SOIL, CLIMATE, AND TOPOGRAPHY UPON AGRICULTURE

The southern regions of Germany which might have gained some agricultural advantage because of a more southern location lose this advantage of latitude because of the high altitude and mountainous character of the country. The northern and eastern sections of Germany are for the most part sandy plains. In the summer the sky is commonly cloudy and the temperature cool. Thus, in general throughout Germany, physical conditions do not favor a highly productive agriculture, but a highly productive agriculture has been developed in spite of inclement natural conditions by the application of intensive cultural methods and the extensive use of fertilizers.

The sandy soil of Prussia is better adapted to rye than to wheat. Farmers aim to select their best fields for wheat, and still they have not been able to increase profitable wheat production in any way proportional to the increasing demand for white bread. The main reason for extensive rye production is not primarily a preference for rye bread but the better adaptation of soil and climate to this crop. The increasing industrial population before the war demanded wheat bread almost exclusively. Even in such mid-eastern cities as Berlin the wheat ration constituted 70 per cent of bread grains consumed. Although in the districts southwest of Prussia physical conditions are somewhat more favorable to wheat production, still the mountainous districts of the south are more adaptable to rye production. As a result Germany before the war produced considerably more rye than the population consumed, while wheat had to be imported in increasing quantities.

On account of the humid climate, German bread grains do not produce a high-grade flour; for that reason it has been necessary that they be mixed with grain grown in drier countries. German cereals are so humid that the American system of elevators is unsuitable. Even in large warehouses grain must be spread out rather thinly on floors to avoid deterioration. Largely on account of the humid climate, German barley is of a type suitable for beer making. Consequently, during pre-war days, the larger part of the home-produced barley was used for beer, and the drier Russian barley, high in protein, was imported for animal feeds.

The climate of Germany is not warm enough for corn to ripen; on the other hand, the northern and eastern plains are excellently suited for potato production. The local uses of the potato crop in Germany in a way are similar to the uses to which the corn crop is put in the United States, for potatoes form the basis of pork production. When corn is very cheap it comes into competition with German potatoes, especially in the starch industry, in the production of ethyl alcohol, and feed for livestock.

GENERAL EFFECTS OF TERRITORIAL CHANGES BROUGHT ABOUT BY THE TREATY OF VERSAILLES ON GERMAN AGRICULTURE

The total territorial change in continental Germany, including the Saar Basin, brought about by the treaty of Versailles, involves 13.1 per cent of the former German area; the population of these territories amounted to only 11 per cent of the total inhabitants of the Empire (1910 census). Therefore, in 1910, the territory included within the boundaries of the present-day Republic of Germany contained a somewhat denser population (318 per square mile) than the average for the entire Empire (311 per square mile), as shown in Table 9.

TABLE 9.—*Total area and population of the former German Empire, 1910* [1]

District	Area	Population as of Dec. 1, 1910	Number per square mile
	Square miles		
Germany, 1923 boundaries	181,524	57,799,808	318
Saar district: [2]			
Rhine Province	574	572,112	997
Bavaria	170	80,946	476
Total	182,268	58,452,866	321
Areas ceded:			
From East Prussia—			
To Memel	1,026	141,238	138
To Poland	194	24,787	128
From West Prussia—			
To Danzig Free State	739	330,630	447
To Poland	6,125	964,704	158
From Pomerania to Poland	4	224	56
From Brandenburg to Poland	(2)		
From Posen to Poland	10,055	1,946,461	194
From Upper Silesia—			
To Czechoslovakia	110	45,396	413
To Poland	1,242	893,074	719
From Lower Silesia to Poland	196	26,248	134
From Schleswig-Holstein to Denmark	1,542	166,348	108
From Rhine Province to Belgium	400	60,003	150
Total from Prussia	[3] 21,633	4,599,113	213
Alsace-Lorraine to France	5,607	1,874,014	334
Total areas ceded:			
Including estuaries and inlets	27,240	6,473,127	238
Excluding estuaries and inlets	26,554		244
Total former German Empire	[4] 208,822	64,925,993	311
Per cent in ceded territories and the Saar	13.1	11.0	

Prepared in the German Statistisches Reichsamt, Oct. 31, 1923, from material not yet published.

[1] The boundaries are not yet definitely settled. These figures are subject to change.

[2] Less than 1 square mile.

[3] The area of the German Empire according to the census of 1910, as given above, is exclusive of estuaries and inlets, whereas the figures for the areas lost from Prussia include 686 square miles of estuaries and inlets.

[4] According to a revision of the area of the Bavarian Bezirksamt "Neuburg a Donau" the area of Bavaria and the total area of Germany should be reduced by 4 square miles, which has not been deducted in the figures above.

Not only did the area of the present Republic contain a denser population than the average for the Empire, but the ceded territories and Saar contained 15.3 per cent of Germany's agricultural population as contrasted with 8.9 per cent of those engaged in mining and manufacturing and 8.2 per cent of those engaged in commerce. Over a third of these industrialists and about a fourth of the farmers in the ceded territories lived in Alsace-Lorraine, and nearly half of those engaged in commerce and about 70 per cent of the farmers lived in territories ceded to Poland. (Table 10.)

TABLE 10.—*Population, by occupations, in the districts which composed the former German Empire, 1907*

District	Agriculture and forestry			Mining and manufacturing	Commerce trade, and hostelry	Unskilled laborers, servants, etc.	Independent professions, public service, etc.	Population living on annuities, etc., and interest	Total
	General farming and stock raising	Forestry, hunting, and fishing	Total						
Germany (1923 boundaries)[1]	14,600,762	372,006	14,972,768	24,035,277	7,596,837	709,827	2,866,682	4,627,124	54,808,515
Saar region:									
Rhine Province	59,636	1,116	60,752	339,035	54,438	4,125	22,514	51,635	532,499
Bavaria	16,953	431	17,384	43,529	5,683	440	2,657	6,272	76,965
Territories ceded:									
From East Prussia	91,072	3,579	94,651	26,186	14,866	2,061	5,959	15,488	159,211
From West Prussia—									
To Danzig Free State	70,564	5,503	76,067	113,624	50,041	11,867	27,108	37,675	316,382
To Poland	518,993	13,445	532,438	174,874	68,729	12,700	51,691	73,308	913,740
From Posen to Poland	979,420	13,092	992,512	430,717	162,064	22,376	95,689	137,609	1,840,967
From Silesia[2]	249,668	9,658	259,326	437,777	77,773	9,385	31,799	84,286	900,346
From Schles.-Holst. to Denmark	78,734	2,175	80,909	34,191	20,139	2,122	8,258	14,293	159,912
From Rhine Province to Belgium	25,475	737	26,212	20,375	6,276	481	6,095	4,132	63,571
Alsace-Lorraine to France	551,658	16,499	568,157	730,952	221,393	17,364	159,502	122,881	1,820,249
Total ceded[2]	2,565,584	64,688	2,630,272	1,968,696	621,281	78,356	386,101	489,672	6,174,378
Total former German Empire[2]	17,242,935	438,241	17,681,176	26,386,537	8,278,239	792,748	3,277,954	5,174,703	61,591,357
Per cent in ceded territories and Saar	15.3	15.1	15.3	8.9	8.2	10.5	12.5	10.6	11.0

Germany, Statistisches Reichsamt Statistisches Jahrbuch für das Deutsche Reich, 1921–22.

[1] Includes preliminary estimates of the population lost from Upper Silesia as a result of the conference of Oct. 20, 1921.

[2] Excludes population lost from Upper Silesia as a result of the conference of Oct. 20, 1921, according to preliminary figures.

The districts composing the Republic of Germany were in 1910 relatively more highly industrialized than was the former Empire as a whole and correspondingly less agricultural, for not only did the ceded territories maintain a high percentage of farmers but they included, especially the eastern districts, some of the best food-surplus producing areas of the Empire.

EFFECT OF THE VERSAILLES TREATY ON LAND UTILIZATION

Agricultural practices vary somewhat in different parts of Germany and the territories ceded on the southwest, northwest, northeast, and southeast represented all the various types of farming. Comparing the manner in which land was utilized in the territory of the whole Empire in 1913 with the relative numbers of acres under various crops, orchards, forests, etc., and the land put to nonagricultural uses during 1913 in the territories now comprised within the present frontiers of the Republic, in the Saar and the ceded districts there was a slightly higher percentage of the land devoted to root crops and to cereals and legumes than was the case in the territories now composing the Republic or in the Empire as a whole. A some-

what smaller proportion of the land was given over to forests, orchards, gardens, meadows, and nonagricultural uses in the ceded territories than in the Republic, as brought out in Table 11.

TABLE 11.—*Utilization of land in Germany, boundaries of 1923, the Saar, and ceded territories, as compared with the German Empire, 1913*

Classification	Former German Empire, 1913		Germany (boundaries, 1923), 1913		Ceded territories and Saar, 1913	
	1,000 acres	*Per cent*	*1,000 acres*	*Per cent*	*1,000 acres*	*Per cent*
Cereals and legumes	40,156.0	63.7	34,021.2	64.0	6,134.8	61.8
Tubers, roots, etc	12,342.6	19.6	10,213.4	19.2	2,129.2	21.4
Vegetables grown in the fields	317.0	.5	286.9	.6	30.1	.3
Industrial plants [1]	277.5	.4	241.4	.5	36.1	.4
Fodder plants	6,561.5	10.4	5,533.8	10.4	1,027.7	10.3
Fallow	1,662.5	2.6	1,451.5	2.7	211.0	2.1
Temporary meadows	1,749.2	2.8	1,378.8	2.6	370.4	3.7
Total plow land	63,066.3	100.0	53,127.0	100.0	9,939.3	100.0
Plowland	63,066.3	47.2	53,127.0	45.8	9,939.3	55.8
Meadows	14,805.5	11.1	13,181.1	11.4	1,624.4	9.1
Pastures	6,406.1	4.8	5,650.4	4.9	755.7	4.2
Vineyards	293.1	.2	222.6	.2	70.5	.4
Gardens, orchards, and nonagricultural areas	49,134.3	36.7	43,700.6	37.7	5,433.7	30.5
Total area	133,705.3	100.0	115,881.7	100.0	17,823.6	100.0

1913 old boundaries: Germany, Kaiserliches Statistisches Amt. Vierteljahrshefte zur Statistik des Deutschen Reichs.
1913 new boundaries: Unpublished statistics of German Statistisches Reichsamt.

[1] Oleaginous, fiber, and other plants used in industry.

The striking feature of this table on land utilization is the percentage of land under plow in 1913 which was 55.8 per cent in the ceded districts and the Saar against 45.8 per cent in the territories of the Republic. This difference of 10 per cent emphasizes the higher agricultural character of the former districts.

EFFECT OF THE VERSAILLES TREATY ON LARGE ESTATES

Detailed studies in Germany as well as in other European countries have shown that, in general, large marketable surpluses of cereals and sugar beets are to be associated more closely with the extensive farming of large estates than with the small farms of the peasants. The region of large farms in the German Empire lay east of the River Elbe and, while detailed statistics are not available as to differences in yield on farms of different sizes, it is true that in these districts there was a large surplus production of grain, sugar, potatoes, alcohol, and starch. In these eastern districts farms over 247 acres (100 hectares) comprise about 40 per cent of the area, and those over 49 acres (20 hectares), 60 per cent. In some regions the average was much higher than this. Farm holdings become smaller as one travels from eastern Germany toward the central, western, and southern districts. In southern and western Germany holdings are for the most part of the small peasant type and in these sections there is a deficit of agricultural products.

A glance at Table 12 shows that whereas Germany ceded 14.5 per cent of her farm lands to surrounding countries, she ceded 20.8 per cent of her large farms (247 acres and over) that produced large marketable surpluses of cereals as compared with from 12 to 13 per cent of the smaller holdings that produced small marketable surpluses of cereals.

TABLE 12.—*Agricultural land holdings: Area in Germany according to the size of holdings*

District	Total area of holdings (acres)						
	Less than 1.24	1.24 to 4.94	4.94 to 12.4	12.4 to 49.4	49.4 to 247	247 and over	Total
Germany, 1923 boundaries	778,785	2,949,405	7,185,157	22,397,848	20,143,365	13,815,237	67,269,797
Saar territory	10,114	41,421	63,836	106,448	17,334	4,967	244,120
Areas ceded:							
From East Prussia	1,819	8,488	30,299	118,324	137,736	90,429	387,095
From West Prussia	18,854	61,839	135,604	729,308	870,753	987,896	2,804,254
From Posen	36,168	91,012	191,448	1,261,717	961,629	2,122,441	4,664,415
From Silesia	6,009	42,346	86,364	195,337	62,704	201,055	593,815
From Schleswig-Holstein	1,137	5,770	23,225	161,408	469,490	88,182	749,212
From Rhine Province	259	3,971	18,757	47,391	13,284	1,527	85,189
Alsace-Loraine	35,311	185,362	431,664	733,902	358,621	121,215	1,866,075
Total areas ceded	99,557	398,788	917,361	3,247,387	2,874,217	3,612,745	11,150,055
Total former German Empire	888,456	3,389,614	8,166,354	25,751,683	23,034,916	17,432,949	78,663,972
Per cent in ceded territories and Saar	12.3	13.0	12.0	13.0	12.6	20.8	14.5

Prepared in the German Statistisches Reichsamt, Sept. 29, 1923.

EFFECT OF TREATY OF VERSAILLES ON FARM CROPS IN GERMANY

As a result of the Versailles Treaty, Germany ceded to neighboring countries and segregated in the Saar territories that in 1910 contained 11 per cent of the population of the Empire and that during 1909–1913 embraced 15.5 per cent of the Empire's wheat-producing area, 17.4 per cent of the rye area, 11.4 per cent of the oats area, 15.3 per cent of the barley area, 17.9 per cent of the potato area, and 20.5 per cent of the sugar-beat area. (See Table 13.) The percentages of the crop areas ceded were greater than the percentage of the population; and consequently the potential food supplies of the population of the territories comprised within the boundaries of the Republic were relatively less than for the population of the Empire as a whole, as shown in Table 14. These supplies of crops, in terms of bushels per 100 inhabitants, were: Wheat, 234.3 in the Empire against 227.1 for the territory within the boundaries of the Republic; rye, 685.7 against 637.3; barley, 244.2 against 231.5; spelt, 36.2 against 40.6; oats, 911.8 against 912.1. Total cereals in the Empire averaged 2,112.2 against 2,048.6 in the territory now comprising the Republic. There were 2,591 bushels of potatoes produced per 100 inhabitants in the Empire against 2,377 bushels in the territory now comprising the Republic and sugar beets showed 28.3 short tons in the former and 25.4 short tons in the latter.

The differences of 63.6 bushels of cereals, 214.1 bushels of potatoes, and 2.9 short tons of sugar beets per 100 inhabitants placed the Republic at the outset in a potentially inferior economic position as compared with the Empire; cereals 3 per cent, potatoes 8.3 per cent, and sugar beets 10.2 per cent.

In addition to the initial lowered potentiality of the economic status of the country directly attributable to the Versailles treaty, other factors and influences operating during and since the war have further depressed Germany's agricultural situation. The primary effect of these factors and influences is seen in changes in the manner and the extent of the utilization of agricultural lands since the war, as indicated in Table 13.

TABLE 13.—*Cereals, potatoes, and sugar beets: Areas in Germany, boundaries of 1923, the ceded territories, and the Saar, as compared with the German Empire, average 1909–1913*

Item	Former German Empire, 1909–1913	Germany (boundaries of 1923), 1909–1913		Ceded territories and the Saar, 1909–1913	
			Per cent		*Per cent*
Total area (square miles)	208,822	181,524	86.9	27,298	13.1
Population	64,926,000	57,800,000	89.0	7,126,000	11.0
Area:					
Cereals—	*1,000 acres*	*1,000 acres*		*1,000 acres*	
Wheat	4,768	4,028	84.5	740	15.5
Rye	15,387	12,713	82.6	2,674	17.4
Spelt	707	706	99.9	1	.1
Oats	10,750	9,529	88.6	1,221	11.4
Barley	4,092	3,464	84.7	628	15.3
Total cereals	35,704	30,440	85.3	5,264	14.7
Potatoes	8,251	6,775	82.1	1,476	17.9
Sugar beets	[1] 1,353	1,075	79.5	278	20.5

[1] One year only; sugar year 1912–13.

TABLE 14.—*Cereals, potatoes, and sugar beets: Production in Germany, boundaries of 1923, the ceded territories, and the Saar, as compared with the German Empire, average 1909–1913*

Crop	Former German Empire, 1909–1913		Germany (boundaries of 1923), 1909–1913		Ceded territories and the Saar, 1909–1913	
	Total production	Per 100 inhabitants	Total production	Per 100 inhabitants	Total production	Per 100 inhabitants
Cereals:	*1,000 bus.*	*Bushels*	*1,000 bus.*	*Bushels*	*1,000 bus.*	*Bushels*
Wheat	152,119	234.3	131,274	227.1	20,845	292.5
Rye	445,222	685.7	368,337	637.3	76,885	1,078.9
Spelt	23,529	36.2	23,497	40.6	32	.5
Oats	591,996	911.8	527,178	912.1	64,818	909.6
Barley	138,517	244.2	133,787	231.5	24,730	347.0
Total cereals	1,371,383	2,112.2	1,184,073	2,048.6	187,310	2,628.5
Potatoes	1,681,959	2,590.6	1,373,609	2,376.5	308,350	4,327.1
	1,000 short tons	*Short tons*	*1,000 short tons*	*Short tons*	*1,000 short tons*	*Short tons*
Sugar beets	[1] 18,345	28.3	14,679	25.4	3,666	51.4

[1] One year only; sugar year 1912–13

POSTWAR GERMAN AGRICULTURAL SITUATION

The most striking feature of the depression in Germany's agriculture following the World War is the decrease in the areas under crops. This decrease amounted to 3,958,000 acres in 1921, 4,274,000 acres in 1922, and 3,632,000 acres in 1923. (See Table 15.)

Among the influences that have adversely affected German agriculture, three general sets of factors may be mentioned:

(1) There was a reversal of the Government policy from a protection of the farmer before the war, making the country as nearly self-sufficing as possible, to a policy of favoring the industrial interests at the expense of the producers. This has included a reversal of the tariff policy, the establishment of export prohibitions, and the enactment of innumerable laws regulating the farmer's business to his disadvantage in the interest of the consumer, such as grain requisitions at confiscatory prices.

(2) Chaotic economic conditions following the war characterized by the demoralization of the nation's currency have rendered it hazardous for the farmer to sell his products for cash unless he has some means immediately to transfer that cash into real property. It is reported that German farmers exchanged their products for all sorts of commodities—shoes, clothing, fertilizer, implements, and general wares—until they were stocked to repletion. The next step was to restrict their operations to a basis of self-sufficiency, increasing their flocks and herds rather than producing crops that could be sold only for money whose value vanished within an incredibly short time or that could only be exchanged for goods for which the farmer had no immediate use.

TABLE 15.—*Utilization of land in Germany, 1921–1923, as compared with 1913*

[Thousands of acres—000 omitted]

Classification	Boundaries of 1923			
	1913	1921 (estimated) [1]	1922 (estimated) [1]	1923 (estimated) [1]
Cereals, legumes	34,021.2	28,799.3	28,394.0	29,256.9
Tubers, roots, etc	10,213.4	10,080.9	10,472.8	10,299.6
Vegetables grown in the field	286.9	320.7	319.8	285.9
Industrial plants [2]	241.4	461.6	350.4	351.4
Fodder plants	5,533.8	6,379.1	6,162.4	6,257.6
Fallow	1,451.5	1,570.1	1,650.1	1,497.7
Temporary meadows	1,378.8	1,676.1	1,701.8	1,592.0
Total plow land	53,127.0	49,287.8	49,051.3	49,541.1
Meadows	13,181.1	13,459.5	13,476.1	13,453.8
Pastures	5,650.4	6,159.7	6,298.6	6,168.6
Vineyards	222.6	205.1	206.6	206.3
Gardens, orchards, and nonagricultural areas	43,700.6	46,769.6	46,849.1	46,511.9
Total area of Germany	115,881.7	115,881.7	115,881.7	115,881.7
Decrease in total plow land from pre-war		3,839.2	4,075.7	3,585.9
Increase in fallow land		118.6	198.6	46.2
Decrease in land under crops		3,957.8	4,274.3	3,632.1

1913: Unpublished statistics of German Statistisches Reichsamt.
1921: Germany, Statistiches Reichsamt, Vierteljahrshefte zur Statistik des Deutschen Reichs, vol. 31, heft 3, 1922, p. 83.
1922 and 1923. Deutscher Reichsanzeiger und Preussischer Staatsanzeiger, Sept. 8, 1923. Material prepared in the German Statistisches Reichsamt, Sept. 17, 1923.

[1] Whereas the figures for 1913 were taken from an actual census, those for the postwar years are only estimates for the area seeded, so only an approximate comparison can be made.
[2] Oleaginous, fiber, and other plants used in industry.

(3) Depletion of labor and draft animals during the war, together with general depreciation of agricultural machinery, initiated a tendency to abandon cereal production more rapidly than livestock production, which was followed, as a natural sequence, by the production of a larger percentage of fodder and forage crops.

According to the 1924 statistics wheat has fallen off 400,000 acres and rye 2,200,000 acres, indicating that most of the abandonment of farm lands has been in the regions of light, sandy, low-yielding soils. Barley is now up to pre-war acreage and the areas under oats in 1924 showed a gain of 450,000 acres over the 1923 acreage, though still 800,000 acres below pre-war. Potatoes have held their own, whereas the sugar-beet industry, cut off from former sources of cheap labor from the districts ceded to Poland, has diminished the acreage under this crop. No pre-war estimates are available for fodder beets, except for Prussia, where the acreage has increased from 537,000 in 1909–1913

to 937,000 in 1921, or an increase of 75 per cent. It is probable that similar increases have taken place in other parts of the Republic. The livestock industry has gained about 800,000 acres in hay lands and pasture allowance in recent years as compared with pre-war, while the millions of acres of idle plow lands that are not officially classed as meadows or pastures and that have reverted to a wild state produce grasses of a fair forage quality in many districts, affording possibilities of increased pasturage. This has made possible the recent large increase in the numbers of sheep and the maintenance of horses at pre-war numbers, particularly on the large estates.

INACCURACIES IN GERMAN PRODUCTION STATISTICS

Production has varied more or less according to the season. In studying the figures in the tables on production and yields per acre that follow, and the statistics of the separate crops, allowance must be made for inaccuracies in the estimates. Many German economists feel that the official crop statistics overemphasize the actual decreases in crop production, although it is universally recognized that there has been a considerable actual reduction in crop yields. It is believed, particularly, that pre-war estimates were in general too high, for which various explanations are given.

It is impossible to gauge accurately the amount of the overestimate, and German economists are loath to state a percentage or other estimate of the amount of error. Professor Ballard is quoted as stating that the statistical indications of production were too high by about 10 per cent. Hermann Warmbold, formerly Minister of Agriculture for Prussia, in his bulletin "Futtermittel im Kriege,"[8] written during the war, assumes an overestimate of 15 per cent. Many economists are of the opinion that official estimates of crop production since the war have been too pessimistic. Just as in other lands, in which agricultural products have been subject to requisition, so in Germany the farmer has been reluctant to return a full statement of his yields. In Germany the area of every field is a matter of record and it is impossible to dissimulate as to the area or the crop sown. However, it is impossible to check the harvesting of each field, and therefore most differences between the reported and the actual production are reflected in yields per acre. No definite statement has been made as to the amount of these underestimates, but general opinion seems to be that they are not so great as the pre-war overestimates.

The areas seeded to the leading agricultural products within the present boundaries of the Republic of Germany, contrasting the pre-war period (1909–1913) with the latest years for which statistics are available, are given in Table 16.

[8] "Feeding stuffs in time of war."

TABLE 16.—*Cereals, potatoes, and beets: Area seeded in Germany, 1921–1924, as compared with the pre-war average, 1909–1913*

[Thousands of acres—000 omitted]

Crop	Boundaries of 1923									
	Pre-war average, 1909–1913		1921		1922		1923		1924 (preliminary)	
	Acres	*Per cent*	*Acres*	*Per cent*	*Acres*	*Per cent*	*Acres*	*Per cent*	*Acres*	*Per cent*
Wheat:										
Winter	3,522	11.6	3,149	12.4	2,931	11.7	3,123	11.9	3,143	11.8
Spring	506	1.6	412	1.6	464	1.9	530	2.0	481	1.8
Total wheat	4,028	13.2	3,561	14.0	3,395	13.6	3,653	13.9	3,624	13.6
Rye:										
Winter	12,450	40.9	10,340	40.7	10,073	40.4	10,577	40.3	10,189	38.1
Spring	263	.9	199	.8	164	.7	212	.8	336	1.3
Total rye	12,713	41.8	10,539	41.5	10,237	41.1	10,789	41.1	10,525	39.4
Spelt	706	2.3	372	1.5	313	1.2	317	1.2	304	1.1
Total bread cereals	17,447	57.3	14,472	57.0	13,945	55.9	14,759	56.2	14,453	54.1
Barley:										
Winter	[1] 116	.4	[2] 306	1.2	[2] 257	1.0	267	1.0	265	1.0
Spring	3,348	11.0	2,808	11.0	2,846	11.4	2,949	11.3	3,306	12.3
Total barley	3,464	11.4	3,114	12.2	3,103	12.4	3,216	12.3	3,571	13.3
Oats	9,529	31.3	7,814	30.8	7,912	31.7	8,265	31.5	8,712	32.6
Total cereals	30,440	100.0	25,400	100.0	24,960	100.0	26,240	100.0	26,736	100.0
Decrease below pre-war average			5,040	16.6	5,480	18.0	4,200	13.8	3,704	12.2
Potatoes	6,775		6,541		6,725		6,738		6,820	
Sugar beets [3]			902		1,031		947		975	
Sugar beets [3]	1,075		821		881		829		876	
Fodder beets	[4]		1,803		1,939		1,869		1,809	

1909–1913: Prussia Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913 (Preussische Statistik, no. 221, 225, 230, 235, 240.)
1921: Germany. Statistisches Reichsamt Vierteljahrshefte zur Statistik des Deutschen Reichs.
1922, 1923, 1924: Germany. Statistisches Reichsamt, Jan. 7, 1925.

[1] Estimate for 1913 only. No basis for an estimate for earlier years.
[2] Estimate made in the Statistisches Reichsamt.
[3] Upper row of figures from Statistisches Reichsamt and lower row from estimates of Die Deutsche Zuckerindustrie, exclusive of area for seed beets.
[4] No estimates available

The average production and yields per acre for the pre-war period (1909–1913) contrasted with that of the years 1921, 1922, 1923, and 1924, as far as statistics are available, are given in Tables 17 and 18.

TABLE 17.—*Production of cereals, potatoes, and beets in Germany, 1921–1924, as compared with the pre-war average, 1909–1913*

[In thousands—000 omitted]

Crop	Boundaries of 1923				
	Pre-war average 1909–1913	1921	1922	1923	1924 (preliminary)
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Wheat:					
Winter	114,500	96,412	61,253	91,445	76,832
Spring	16,774	11,386	10,673	15,003	12,367
Total wheat	131,274	107,798	71,926	106,448	89,199
Rye:					
Winter	363,098	264,220	203,673	259,046	219,828
Spring	5,239	3,428	2,360	3,991	5,745
Total rye	368,337	267,648	206,033	263,037	225,573
Spelt	23,497	11,419	6,251	8,810	6,419
Total bread cereals	523,108	386,865	284,210	378,295	321,191
Barley:					
Winter	[1] 4,988	[1] 12,392	[1] 6,917	10,761	9,762
Spring	128,799	89,057	73,837	97,685	100,464
Total barley	133,787	101,449	80,754	108,446	110,226
Oats	527,178	344,812	276,643	420,731	389,525
Total cereals	1,184,073	833,126	641,607	907,472	820,942
Potatoes	1,373,609	960,888	1,494,180	1,197,095	1,337,540
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Sugar beets [2]		8,796	11,893	9,586	11,318
Sugar beets [2]	14,679	8,297	10,258	8,087	10,714
Fodder beets	([3])	19,645	27,284	24,242	25,626

1909–1913: Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913. (Preussische Statistik, Nos. 221, 225, 230, 235, 240.) Second estimate of sugar-beet production furnished by Die Deutsche Zuckerindustrie.
1921: Germany, Statistisches Reichsamt Vierteljahrshefte zur Statistik des Deutschen Reichs.
1922–1924: Germany, Statistisches Reichsamt, Jan. 7, 1925.

[1] No official estimate of the production of winter barley was made for all Germany before 1923. Production estimated from the area reported or estimated on the basis of the relation of the yield per acre of winter grain to summer grain in Prussia where production statistics for winter grain are available.
[2] Lower row of figures are quantities of beets worked up at the beet-sugar factories taken from the statistics of Die Deutsche Zuckerindustrie. Upper row are production figures from the Statistisches Reichsamt.
[3] No estimate available.

TABLE 18.—*Cereals, potatoes, and beets: Crop yields per acre in Germany, 1921–1924, as compared with the average, 1909–1913*

Crop	Boundaries of 1923				
	Pre-war average, 1909–1913	1921	1922	1923	1924
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Wheat:					
Winter	32.5	30.6	20.9	29.3	24.4
Spring	33.1	27.6	23.0	28.3	25.7
Total wheat	32.6	30.3	21.2	29.1	24.6
Rye:					
Winter	29.2	25.6	20.2	24.5	21.6
Spring	19.9	17.2	14.4	18.8	17.1
Total rye	29.0	25.4	20.1	24.4	21.4
Spelt	33.3	30.7	20.0	27.8	21.1
Total bread cereals	30.0	26.7	20.4	25.6	22.2
Barley:					
Winter	43.0	40.4	26.9	40.3	36.8
Spring	38.5	31.7	25.9	33.1	30.4
Total barley	38.6	32.6	26.0	33.7	30.9
Oats	55.3	44.1	35.0	50.9	44.7
Total cereals	38.9	32.8	25.7	34.6	30.7
Potatoes	202.7	146.9	222.2	177.7	196.1
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Sugar beets [1]		9.1	11.5	10.1	11.6
Sugar beets [1]	13.7	10.1	11.6	9.8	12.2
Fodder beets		10.9	14.1	13.0	14.2

[1] Upper row of figures computed from area and production given by the German Statistisches Reichsamt; lower row from Die Deutsche Zuckerindustrie.

The differences between the average yields per acre during the period 1909–1913 and the years 1921, 1922, 1923, and 1924 are striking, ranging for total cereals from 4.3 bushels (1923) to 13.2 bushels (1922) below the pre-war. Part of this difference is attributable to the conservatism of the peasants in reporting their yields after the war and to the optimism of the German statistical office before the war; but lack of fertilizers, poorer cultural methods, and unsatisfactory climatic conditions have caused actual yields to fall considerably below those of pre-war days.

Based upon Tables 16 and 17 is the following distribution per 100 inhabitants (Table 19) of the areas seeded to and the production of the chief field crops:

TABLE 19—*Cereals, potatoes, and beets: Area and production per 100 inhabitants in Germany, 1921–1924, as compared with the average, 1909–1913*

Crop	Boundaries of 1923									
	Pre-war average, 1909–1913 [1]		1921 [2]		1922 [3]		1923 [4]		1924 [5]	
Wheat:	*Acres*	*Bushels*	*Acres*	*Bushels*	*Acres*	*Bushels*	*Acres*	*Bushels*	*Acres*	*Bushels*
Winter	6.1	198.1	5.2	157.9	4.7	99.2	5.0	146.8	5.0	122.3
Spring	.9	29.0	.7	18.6	.8	17.3	.9	24.1	.8	19.7
Total wheat	7.0	227.1	5.9	176.5	5.5	116.5	5.9	170.9	5.8	142.0
Rye:										
Winter	21.5	628.2	16.9	432.8	16.3	329.8	7.0	416.0	16.2	349.9
Spring	.5	9.1	.3	5.6	.3	3.8	.3	6.4	.5	9.1
Total rye	22.0	637.3	17.2	438.4	16.6	333.6	17.3	422.4	16.7	359.0
Spelt	1.2	40.6	.6	18.7	.5	10.1	.5	14.1	.5	10.2
Total bread cereals	30.2	905.0	23.7	633.6	22.6	460.2	23.7	607.4	23.0	511.2
Barley:										
Winter	.2	8.6	.5	20.3	.4	11.2	.4	17.3	.4	15.5
Spring	5.8	222.9	4.6	145.9	4.6	119.6	4.7	156.9	5.3	160.0
Total barley	6.0	231.5	5.1	166.2	5.0	130.8	5.1	174.2	5.7	175.5
Oats	16.5	912.1	12.8	564.8	12.8	448.0	13.3	675.6	13.9	620.0
Total cereals	52.7	2,048.6	41.6	1,364.6	40.4	1,039.0	42.1	1,457.2	42.6	1,306.7
Potatoes	11.7	2,375.6	10.7	1,573.8	10.9	2,419.5	10.8	1,922.3	10.9	2,129.0
		Short tons		*Short tons*		*Short tons*		*Short tons*		*Short tons*
Sugar beets [6]			1.6	14.4	1.7	19.3	1.5	15.4	1.6	18.0
Sugar beets [6]	1.9	25.4	1.3	13.6	1.4	16.6	1.3	13.0	1.4	17.1
Fodder beets	(7)	(8)	3.0	32.2	3.1	44.2	3.0	38.9	2.9	40.8

[1] Population, 1910, 57,799,808.
[2] Population, 1921, 61,055,000 (estimated).
[3] Population, 1922, 61,755,000 (estimated).
[4] Population, 1923, 62,275,000 (estimated).
[5] Population, 1924, 62,825,000 (estimated).
[6] Upper row calculated from area and production given in Statistisches Reichsamt and lower row from Die Deutsches Zuckerindustrie.
[7] No estimate for acreage available.
[8] No estimate for production available.

The difference between German pre-war cereal production and the wheat, rye, spelt, barley, and oats now produced shows a falling off of 250,000,000 to 540,000,000 bushels, and sugar beets have dropped off at least 4,000,000 tons. The shortage in cereal production is due for the most part to the great reduction in acreage, especially in rye. Rye acreage has been from 2,000,000 to 2,500,000 acres below the 1909–1913 average ever since the war. Barley alone in 1924 was up to the pre-war acreage, but other cereals have shown greatly decreased areas. Total cereals in 1924 were 12.2 per cent, or around 3,700,000 acres, below normal.

GERMAN FOOD SITUATION AS AFFECTED BY VERSAILLES TREATY AND POSTWAR DEPRESSION

The territorial changes attending the Versailles treaty did not greatly affect Germany's cereal situation, the total effect (contrast-

ing the 1909–1913 average production per 100 inhabitants of the Empire and the territories included within the present boundaries of the Republic) being only about 3 per cent decrease in potential production. Comparing production per 100 inhabitants in 1924 with the average for the territories included within the present boundaries of the Republic in 1909–1913, the postwar depression is found to be profound, amounting to 43.5 per cent for bread cereals, 36.2 per cent for total cereals, and 29.1 per cent for sugar beets. Potatoes alone have tended to maintain their former importance, the production per 100 inhabitants being only 10.4 per cent below pre-war as shown in Table 20.

TABLE 20.—*Cereals, potatoes, and sugar beets: Production per 100 inhabitants in Germany, 1923 boundaries, for 1909–1913, compared with total Empire and 1924 for the Republic*

Crop	German Empire	Germany (1923 boundaries)		Republic of Germany	
	Average, 1909–1913	Average, 1909–1913	Per cent of 1909–1913, Empire	1924	Per cent of 1909–1913 (1923 boundaries)
	Bushels	*Bushels*	*Per cent*	*Bushels*	*Per cent*
Wheat	234.3	227.1	96.9	142.0	62.5
Rye	685.7	637.3	92.9	359.0	56.3
Spelt	36.2	40.6	112.2	10.2	25.1
Total bread cereals	956.2	905.0	94.6	511.2	56.5
Barley	244.2	231.5	94.8	175.5	75.8
Oats	911.8	912.1	100.0	620.0	68.0
Total cereals	2,112.2	2,048.6	97.0	1,306.7	63.8
Potatoes	2,590.6	2,376.5	91.7	2,129.0	89.6
	Short tons	*Short tons*		*Short tons*	
Sugar beets	28.3	25.4	89.8	18.0	70.9

LARGE ESTATES v. SMALL HOLDINGS IN GERMANY

Before this survey was made there had been a gradual natural decrease in the size of farm holdings for some years, as indicated by the comparison of the percentages of agricultural areas classified by size of holdings in 1895 and 1907 in Table 21.

TABLE 21.—*Percentage of agricultural area, by size of holdings, 1895 and 1907*

Year	Below 5 acres	5 to 12.4 acres	12.4 to 49.4 acres	49.4 to 247 acres	247 acres and over
1895	5.56	10.11	29.9	30.35	24.08
1907	5.40	10.40	32.7	29.30	22.20

German students of land economics state that the tendency shown from 1895 to 1907 has continued toward a still smaller percentage of large estates in recent years.

Land settlements which were brought to a standstill because of the war were again taken up with great enthusiasm in 1919, when the national settlement law was passed. The avowed purpose of the founders of this law was to place about one-third of the large estates

at the disposal of the settlers. This was felt to be necessary in order to take care of the impoverished population and the further increase of national agricultural laborers. From 1919 to 1923, inclusive, the total of new settlements in Prussia amounted to 238,511 acres. Such settlements were largely at the expense of large estates, although about 66,717 acres were given over from the Prussian domain. The results of these land settlements have been disappointing as a matter of national economics, the movement constituting, as it does, an appreciable change in the character of ownership. There are now many complaints that annexed lands have been taken from well-managed large estates and have fallen into the hands of those not skilled in agriculture and who are otherwise poor farmers.

The large farms of Germany have been very well managed. The production of grain per acre in proportion to the size of holdings was probably no greater than the average of medium and smaller farmers, but their surpluses were far greater because of the relatively small animal and human population maintained throughout the whole year. Consequently, the large farmers were particularly interested in the protective grain tariffs; they were politically active and powerful. The large farmer was at a distinct disadvantage in the production of pigs and cattle because of his smaller year-round labor supply; on the other hand, the small farmer fed or ate a large proportion of the grain he produced. The large farmer had the advantage of better scientific talent, could afford better implements, and, consequently, could till the soil better and deeper. What they lacked in animal fertilizers they made up by larger purchases of artificial manure.

The small farmer had some advantage in the production of hoed crops because with the aid of his family he had a larger amount of labor per acre. With the assistance of the large seasonal supply of labor and machinery, however, the large farmer greatly diminished this advantage, even in the case of the hoed crops (beets, potatoes, etc.), and in the production of sugar beets appears to have had a distinct advantage. In Germany, sugar-beet production depends upon deep plowing and thorough working of the soil, and small farmers do not have sufficient tractive power. There was a greater tendency toward sugar production on the large holdings than on the small.

A marked decrease in the percentage of large farms would decrease the production of domestic grain surpluses and consequently would probably increase the potential demand for foreign grain and would probably decrease the exportable surplus of sugar in Germany as a whole, while it should tend to increase animal production, especially cattle and swine.

WHEAT

Germany lies within the European winter-wheat belt, and wheat is produced rather generally throughout the country with varying success depending largely upon soil and climatic conditions. Wheat enters more largely into the rotation in the southern and western provinces than in the districts of the northeast, where lighter soils are better adapted to rye and potatoes. The south central districts, including the Province of Saxony, the Kingdom of Saxony, Anhalt, and Thuringia, have been the heaviest producing regions. These four regions alone produced nearly a quarter of Germany's domestic surplus.

The greater part of Germany's domestic wheat supply was grown in the southern and western provinces, but at the same time these regions, particularly the western, were the most highly industrialized sections of the Empire, in which the ratio of wheat consumers to producers was high. These districts consumed all the wheat they grew at home, all of the surplus from the eastern and northern districts and imported nearly half as much as the domestic surplus from foreign countries. Importations into these deficit districts were facilitated by their proximity to cheap water transportation of the Rhine, the Weser, and the Elbe, and the great ports of Bremen and Hamburg.

The German people consumed annually, on the average, before the war 192.6 pounds (3.21 bushels) of wheat per capita. The use of wheat as an article of diet, however, varied considerably in different parts of the Empire. When we contrast the wheat-eating Alsatians on the west, consuming at least 434 pounds each per year, with the rye-eating Poles on the east, who consumed yearly not more than 164 pounds of wheat per capita, this dietary variation is striking. The district of Posen, with a population of 1,946,461 had only 194,000 acres under wheat, but exported on the average 2,000,000 bushels annually; Alsace-Lorraine, with a smaller population (1,874,014), had 341,000 acres under wheat and in addition to wheat produced locally imported yearly some 6,500,000 bushels.

EFFECT OF VERSAILLES TREATY ON THE GERMAN WHEAT SITUATION

Germany ceded to Poland from Posen, West Prussia, and East Prussia some of her best wheat lands that produced an average (1909–1913) surplus of approximately 2,500,000 bushels. Some of the ceded districts on the east, particularly Upper Silesia, showed an annual average deficit of about 1,500,000 bushels. Memel had a slight deficit, and the territories now composing Danzig Free State produced a small surplus. On the west, Alsace-Lorraine, the Saar, and the districts ceded to Belgium and Denmark required about 8,500,000 bushels annually in addition to the locally produced wheat.

The estimated average statistical wheat deficit (1909–1913) of the territories now comprised within the Republic of Germany was 61,400,000 bushels, as compared with 68,700,000 bushels, the average amount of wheat imported annually into the whole Empire.

It is estimated that the ceded territories, exclusive of the Saar district, required an annual net importation of 5,461,000 bushels of wheat.

The statistical analysis of the pre-war wheat situation in the ceded districts and in the territory now composing the Republic of Germany appears in Table 22.

Table 22 gives an approximation of production and consumption for the territories ceded, in comparison with the rest of the Empire now constituting the Republic. It must be borne in mind that these figures show a higher production than was actually the case and consequently a higher per capita consumption. If there were any unanimity of opinion as to the amount of the overestimation of crop yields, these estimates might be discounted in computing the tables; but, as it is, it seems better to publish the figures as they are officially given and merely call attention to the possibility of error. Several

inconsistencies also appeared in the official records of the local movement of wheat, so that the statistical balance of deficit to be imported was somewhat higher than the actual import. A correction has been applied to the amounts of surplus or deficit from each region, so that the total in Table 22 equals the actual average import of the Empire.

TABLE 22.—*Wheat: Average approximate balance in the districts which composed the former German Empire, 1909–1913*

District	Population Dec. 1, 1910	Area	Production	Seed	Net production	Disappearance	Deficit (−) or surplus (+)[1]	Disappearance per capita
		Acres	*1,000 Bushels*	*1,000 Bushels*	*1,000 Bushels*	*1,000 Bushels*	*1,000 Bushels*	*Bushels*
Germany, 1923 boundaries	57,799,808	4,028,523	131,274	10,459	120,815	182,230	−61,415	3.15
Saar District:								
Rhine Province	572,112	8,888	230	23	207	1,827	−1,620	3.19
Bavaria	80,946	[2] 3,289	[2] 93	[2] 8	85	267	−182	3.30
Areas ceded:								
From East Prussia—								
To Memel	141,238	6,882	180	20	160	286	−126	2.02
To Poland	24,787	339	8	1	7	47	−40	1.90
From West Prussia—								
To Danzig Free State	330,630	32,212	1,310	88	1,222	930	+292	2.81
To Poland	964,704	109,080	3,383	299	3,084	2,642	+442	2.74
From Posen to Poland	1,946,461	193,974	6,161	615	5,546	3,421	+2,125	1.76
From Pomerania to Poland	224							
From Upper Silesia—								
To Poland	893,074	14,035	335	33	302	1,836	−1,534	2.06
To Czechoslovakia	45,396	6,390	176	15	161	115	+46	2.53
From Lower Silesia to Poland	26,248	2,814	84	7	77	64	+13	2.44
From Schleswig-Holstein to Denmark	166,348	20,667	876	57	819	881	−62	5.30
From Rhine Province to Belgium	60,003	62	1		1	165	−164	2.75
Alsace-Lorraine to France	1,874,014	341,067	8,008	887	7,121	13,574	−6,453	7.24
Total for ceded areas	6,473,127	727,522	20,522	2,022	18,500	23,961	−5,461	3.70
Total Empire	64,925,993	4,768,222	152,119	12,512	139,607	208,285	−68,678	3.21
Per cent in ceded districts and Saar		15.5	13.7	16.4	13.5	12.5	10.6	

Area and production of lost areas: Prussia, Königliches Statistisches Landesamt Statistik der Landwirtschaft, 1909–1913, (Preussische Statistik, Nos. 221, 225, 230, 235, 240), supplemented by statistics prepared in the Preussisches Landesamt.

[1] The quantities of surplus and deficit in each district as calculated from German official statistics have been corrected to such a degree that the total equals the average yearly import amount.

[2] One year only, 1914.

NOTE.—The estimates of the balances between production and disappearance of the various crops, although they are planned only to give an approximate idea of the variations in production and domestic consumption in the different parts of Germany, are believed to give a fairly accurate picture of conditions in general. It was impossible to get an average of the movement of grain in the interior trade for the whole of the period 1909–1913. The trade figures were therefore taken for that year in which the interior trade balance was most nearly in agreement with the five-year average foreign trade balance and a correction was then appled to these figures. Wherever possible the data were taken from the "Sonderabdruck aus Archiv für Eisenbahnwesen," published by the Königlich Preussisches Ministerium der öffentlichen Arbeiten "Deutschlands Getreideernte und die Eisenbahnen," which takes into consideration the ocean shipping trade of Hamburg and Bremen. This publication could not be used in the case of rye, spelt, and potatoes, whose balances appear in tables to follow. The figures for rye and potatoes were taken from "Statistik der Güterbewegung auf Deutschen Eisenbahnen nach Verkehrsbezirken" and "Verkehr und Wasserstände der Deutschen Binnenwasserstrassen," issued by the Kaiserliches Statistisches Reichsamt. For these two crops the statistics on trade and disappearance for the northern region, which includes Hamburg and Bremen, are incomplete.

It must be borne in mind that the disappearance per unit in each case is to be considered as a convenient means of measuring the quantity used for all purposes of the various districts and does not represent a per capita consumption for human food or, in the case of oats, for horses.

The return to France of the heavy wheat-deficit territories of Alsace-Lorraine did not materially reduce the average estimated per capita annual disappearance of wheat within the present boundaries of the Republic. This disappearance in 1909–1913 was 3.15 bushels, or 189 pounds per capita, which is not far from what it was for the Empire, 3.21 bushels, or 192.6 pounds. Since wheat and spelt are normally used almost entirely for human consumption, the per capita disappearance may be considered an approximate estimate of the per capita consumption of both these cereals. Rye, although used mostly for human food, is also used for livestock, so in terms of human consumption the disappearance per capita represents the quantity that was available for human food in case it was required.

FIG. 3.—Average 1909–1913 production of wheat in the German Empire balanced against disappearance

The districts represented by the shaded areas produced annually approximately 14,584,000 bushels more wheat than was locally consumed. This amount was available for shipment to the southwestern deficit regions, where local production fell short of consumption by about 83,262,000 bushels of wheat annually. This necessitated a yearly net importation of approximately 68,678,000 bushels of wheat.

ORIGIN OF WHEAT IMPORTED TO COVER GERMANY'S DEFICIT (1909–1913)

The pre-war wheat deficit of the German Empire was covered by importations averaging (1909–1913) about 68,678,000 bushels. These importations were chiefly from Russia, Argentina, and the United States. Russia alone supplied over half of the net requirement, Argentina supplied about a quarter, followed closely by the United States, as shown in Table 23.

Imports from other countries were more than offset by Germany's exports to neighboring European countries. Practically all the imports went to supply the deficits of the industrial centers on the seaboard and along the valleys of the Rhine and Weser and their tributaries.

TABLE 23.—*Wheat, including wheat flour, in terms of wheat: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire 1909–10 to 1913–14*

[Thousands of bushels—000 omitted]

Country	Years beginning July 1			
	Average, 1909–1913	1921	1922	1923[2]
United States	+16,595	+45,521	+25,204	16,073
Russia	+35,784	(3)	(3)	(3)
Argentina	+17,845	+12,051	+12,337	4,474
Rumania	+6,481	+143	(3)	(3)
Canada	+5,105	+1,495	+2,375	(3)
Australia	+3,718	+9,295	(3)	(3)
British India	+1,822	(3)	(3)	(3)
Alsace-Lorraine		+25	+145	901
Saar District		−1,213	−354	(3)
Hungary	−90	+31	+13	(3)
Austria		−1	−71	(3)
Czechoslovakia		−4	(3)	(3)
Belgium	−1,255	+23	(3)	(3)
Italy	−1,372	(3)	(3)	(3)
Finland	−1,737	−8	(3)	(3)
Denmark	−2,470	+145	(3)	(3)
Netherlands	−2,805	+643	+343	1,009
France	−3,733	+14	+302	3,208
Other countries	−5,210	+1,133	+1,759	+3,925
Total	+68,678	+69,293	+42,053	+29,590

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).

[2] Imports only, except for "other countries" and "total," since figures for exports are not complete enough to compile a fiscal year by countries. The exports, if any, for the countries given are included in "other countries."

[3] If any, included in "other countries."

Since the war Russia has practically disappeared as a source of wheat, and for the first year or two Russia's place in supplying Germany's wheat requirements was taken by the United States. During the season 1921–22 the German Republic, through advantageous credits and gifts, imported more wheat than was imported by the former German Empire to supply the pre-war needs. The next two trade years show a marked falling off. In 1922–23 the total import was 42,000,000 bushels and the next year, 1923–24, only 30,000,000 bushels.

GERMANY'S WHEAT TRADE WITH THE UNITED STATES

Before the war Germany took from the United States annually about 16,600,000 bushels of wheat. In 1921–22 the quantity rose to 45,500,000, but in 1922–23 fell to 25,000,000. In 1923–24 there was a further drop to 16,073,000. In the crop year 1924–25 Germany had a crop of 89,200,000 bushels, as compared with 106,448,000 bushels in the previous season. During the six months July 1 to December 31, 1924, imports from the United States had reached 24,410,338 bushels, as compared with 6,064,836 for the same period during the previous season.

STATISTICAL WHEAT BALANCES OF THE GERMAN REPUBLIC

To contrast production and consumption of wheat, both before and following the war, involves several variable factors. There has been a falling off in imports, marked decreases in production, and increases in population. Production had fallen off more than 40,-

000,000 bushels in 1924, while the population in 1921 had increased 3,300,000 over pre-war estimates and in 1924 was probably 5,000,000 more than pre-war.

Assuming that the average imports of wheat during the period 1909–1913 about covered the Empire's wheat deficit, we have a pre-war picture of the approximate balance between production, requirement, and import for the territory within the present boundaries of the Republic in Table 24.

According to German official statistics wheat production during the years following the war has been far below the pre-war average crop. Some of the differences in production are recognized to be statistical rather than real. Before the war the Government reports are stated to have been overestimates of actual conditions, and since the war, German farmers have shown a marked tendency to understate their production. Government requisitions and legislation, with restrictions and other factors unfavorable to agriculture, have also tended to cause an actual decrease in areas seeded. The small crop of 1922, however, was largely due to adverse weather conditions. For each of the post-war years given in Table 24, even allowing for the variations in Government estimates, the production per capita must have been much less than pre-war, except 1921, which was not far below normal.

TABLE 24.—*Wheat. Statistical balances, Germany, 1923 boundaries, 1921-22 to 1924–25, as compared with pre-war average, 1909–10 to 1913–14*

[In thousands—000 omitted]

Item	Unit	Year beginning July 1				
		Average, 1909–1913	1921	1922	1923	1924
Area sown	Acre	4,029	3,561	3,395	3,653	3,624
Production	Bushel	131,274	107,798	71,926	106,448	89,199
Seed	do	10,459	9,327	8,905	9,584	9,400
Net production	do	120,815	98,471	63,021	96,864	79,799
Theoretical domestic requirement [1]	do	[2] 182,230	192,494	194,701	196,340	198,075
Theoretical deficit	do	61,415	94,023	131,680	99,476	118,276
Net imports	do	([3])	69,293	42,053	29,590	[4] 35,900
Uncovered deficit	do		24,730	89,627	69,886	

[1] Based upon pre-war disappearance norm, 3.1528, times population. (See Table 19 for population.)
[2] Normal disappearance.
[3] Net imports for 1923 boundaries assumed to be the same as the deficit
[4] Six months ended Dec. 31.

During the year 1921–22 the German Government arranged the purchase of wheat from abroad. Imports from America were nearly three times what they were before the war, yet there still appeared to be a theoretical uncovered deficit of 24,700,000 bushels. Although the total imports of wheat into the German Republic exceeded the pre-war average for the German Empire, it is probable that the German people went on very short wheat-bread rations that year, especially in the cities and industrial regions, and resorted to substitutes, particularly potatoes.

The millers' association reported that during the period of relatively low purchasing power of the German mark a plentiful supply of potatoes greatly affected local demand for flour and bread grains. The millers themselves have not found it practicable to mix any large quantity of potato flour with the flour produced from German grain, because of the high moisture content of the latter, but individual bakers may introduce some potato flour into their bread, because this practice is not now forbidden. During the pre-war period, when bread was advertised as rye or wheat bread, it was required to contain only rye or wheat. In general the substitution of potatoes for bread cereals is done largely by the consumers themselves by eating potatoes instead of bread.

In the present state of German economic interrelationships it is impossible to trace any relationship between potato supply and imports of bread cereals.

During the season 1922–23 yields were better, probably up to normal, but imports had fallen off 27,000,000 bushels below the previous year, so there was more real lack of wheat in that year than in the comparatively good year of 1921.

Government requisitioning of grain had ceased in 1923 and there was not the incentive to minimize statements of yields that had characterized returns from the rural districts during the previous years, although the farmers were still suspicious of further possible wheat confiscations by the Government. Thus the 1923 production estimate may be slightly nearer the actual harvest than those of the two previous years. On the other hand, the rapidly depreciating currency up to December, 1923, made the farmer loath to market his wheat except when he was ready to buy something of about the same cost as the value of the grain he had to sell. This resulted in a bad distribution of the crop, with many of the workers in the industrial regions and the urban inhabitants going hungry, even though in some cases farmers might be feeding wheat to their livestock.

Increasing freight rates also tended to keep the crop from being well distributed. Imports were smaller in 1923–24 than in the preceding years. It was about this time that the German Government ceased importing grain and private firms had difficulty in arranging credits with which to buy the required supply.

POSTWAR FOREIGN TRADE IN WHEAT

Before the war imports were normally required in the German Empire to supply about 36 per cent of the total wheat requirement. Because of the loss of some of the wheat-consuming area as well as some of the wheat surplus-producing territory, the relative quantity required normally by the population within the present boundaries of the Republic has not changed materially. It is estimated that with a return to normal production within these boundaries about 38 per cent of the total normal supply will have to be imported. Formerly Russia supplied over one-half of the pre-war importation of wheat. Some of the falling off in importation these last years is certainly due to the inaccessability of the cheap Russian supply, a situation which will improve very slowly in the future. Germany took about equal quantities of wheat from the United States and Argentina, with Argentina slightly in the lead. Since the war the

United States has outstripped that country and has done much, particularly in 1921–22, in supplying the lack caused by Russia's poor crops. In 1923–24 Germany's imports from the United States fell to about the pre-war normal.

Some uneasiness has been felt on the score of Canada's taking away some of our German trade by supplying a flour milled to suit the German taste. But German trade figures for the year 1923–24 (see Table 23, p. 36) indicate a much greater falling off in shipments from Canada to Germany than from the United States to Germany. Argentina has also lost German trade very heavily, with shipments only about a fourth of the pre-war amount and only a little over a third of the shipments for the preceding year.

TABLE 25.—*Wheat and wheat flour: Imports into Germany by months, 1922–23 and 1923–24*

Year and month	Wheat			Wheat flour			Wheat and wheat flour in terms of wheat [1]		
	Imports from—		Total	Imports from—		Total	Imports from—		Total
	United States	Other countries		United States	Other countries		United States	Other countries	
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*1,000 barrels*	*1,000 barrels*	*1,000 barrels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1922–23:									
July	2,103	4,014	6,117	9	23	32	2,143	4,118	6,261
August	1,481	2,852	4,333	12	21	33	1,535	2,946	4,481
September	4,716	2,279	6,995	8	14	22	4,752	2,342	7,094
October	5,772	1,106	6,878	6	22	28	5,799	1,205	7,004
November	2,219	231	2,450	21	19	40	2,314	316	2,630
December	1,180	487	1,667	7	17	24	1,211	564	1,775
January	1,688	365	2,053	19	15	34	1,774	432	2,206
February	1,486	456	1,942	10	8	18	1,531	492	2,023
March	1,340	474	1,814	38	15	53	1,511	542	2,053
April	1,258	1,403	2,661	61	27	88	1,532	1,525	3,057
May	361	1,681	2,042	63	39	102	645	1,856	2,501
June	324	994	1,318	34	30	64	477	1,129	1,606
Total	23,928	16,342	40,270	288	250	538	25,224	17,467	42,691
1923–24:									
July	317	405	722	159	36	195	1,032	567	1,599
August	513	462	975	118	110	228	1,044	957	2,001
September	634	1,160	1,794	118	96	214	1,165	1,592	2,757
October	217	283	500	85	61	146	599	558	1,157
November	440	334	774	87	81	168	832	698	1,530
December	492	358	850	200	161	361	1,392	1,082	2,474
January	464	88	552	183	200	383	1,288	988	2,276
February	241	238	479	242	312	554	1,330	1,642	2,972
March	431	441	872	255	243	498	1,578	1,535	3,113
April	661	1,153	1,814	292	233	525	1,975	2,201	4,176
May	472	610	1,082	321	117	438	1,916	1,137	3,053
June	604	390	994	292	75	367	1,918	728	2,646
Total	5,486	5,922	11,408	2,352	1,725	4,077	16,069	13,685	29,754
1924:									
July	314	342	656	208	113	321	1,250	850	2,100
August	411	402	813	169	155	324	1,171	1,100	2,271
September	1,264	464	1,728	184	216	400	2,092	1,436	3,528
October	2,902	1,619	4,521	450	394	844	4,927	3,392	8,319
November	5,844	2,000	7,844	516	396	912	8,166	3,782	11,948
December	4,782	970	5,752	449	365	814	6,802	2,613	9,415

Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Wheat flour converted to wheat on the basis that 1 barrel of wheat flour is the product of 4.5 bushels of wheat.

During the six-months' period July 1 to December 31, 1924 (Table 25), Germany imported 37,600,000 bushels of wheat as grain

and flour, of which 24,400,000 bushels originated in the United States. The wheat crop in 1924 was 17,000,000 bushels less than the previous season. During the six months July 1 to December 31, 1924, Germany imported 26,000,000 bushels more than was imported during the same period the year before. This increased importation is the consequence of the crop shortage of the 1924 season. It is probable that during the last six months of the present season monthly importations will continue heavier than in former years.

RYE

Rye is predominantly the bread grain of the German people. It was produced in all parts of the former German Empire, though it was employed to a varying degree in the rotation in different localities, based not only upon soil and climatic conditions but upon the food habits of the local population. Within the boundaries of the present Republic the ratio of rye acreage to wheat acreage was about 3.2 : 1, in Posen about 7.8 : 1, and in Alsace-Lorraine about 0.4 : 1. The relative areas given over to rye production in different parts of the Empire indicate to a certain extent poorer local soils not well adapted to wheat culture, but to a greater extent do these ratios reveal the character of the staple food consumed locally within the various districts.

The consumption of rye was heaviest in the eastern provinces, where the yearly per capita disappearance ranged from 280 to 790 pounds as contrasted to a local yearly per capita consumption of wheat amounting to only 110 to 170 pounds. This heavy rye disappearance is not due entirely to human consumption in the form of bread, since this cereal is fed in considerable quantities to livestock and to a less degree is employed in the manufacture of spirits. Most of the peoples living in the eastern provinces of the former Empire subsisted largely upon a cereal and potato diet, with but little meat. (This heavy rye disappearance in Germany should be compared with the yearly cereal consumption per capita in Rumania; corn (maize) 710 pounds and wheat 14 to 16 pounds.)

In the industrial regions of the west, where wheat and imported flour were used more extensively in making bread, the yearly per capita disappearance of rye ranged from 90 to 400 pounds in addition to a yearly per capita consumption of wheat ranging from 165 to 431 pounds. The population of Alsace-Lorraine was almost exclusively wheat-eating, consuming yearly 431 pounds per capita and requiring about 6,000,000 bushels in addition to their local production of 8,000,000 bushels. On the other hand, the per capita rye consumption of these Provinces averaged around 90 pounds per year; the production amounted to 3,500,000 bushels, and there remained a statistical surplus of about 200,000 bushels available for export.

EFFECT OF VERSAILLES TREATY ON RYE SITUATION

Germany ceded to Poland some of her best rye lands, producing an annual average surplus (1909–1913) of about 16,700,000 bushels. The ceded districts of Upper Silesia and Danzig Free State were deficit regions, requiring about 3,900,000 bushels of rye annually in addition to local production. On the west Alsace-Lorraine, northern Schleswig, and the Saar showed statistical surpluses, and the districts ceded to Belgium showed a small deficit.

The estimated average statistical rye surplus of the territories now comprised within the Republic of Germany was about 10,700,000 bushels, as compared with 25,600,000 net bushels actually exported from the Empire annually. It is estimated that the ceded territories and the Saar produced an average (1909–1913) surplus of about 14,900,000 bushels.

The statistical analysis of the pre-war rye situation in the ceded districts and in the territory now composing the Republic of Germany appears in Table 26.

TABLE 26.—*Rye: Average approximate balance in the districts which composed the former German Empire, 1909–1913*

District	Population Dec. 1, 1910	Area	Production	Seed	Net production	Disappearance	Surplus (+) or deficit (−)[1]	Disappearance per capita
		Acres	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*Bushels*
Germany, 1923 boundaries	57,799,808	12,713,320	368,337	30,992	337,345	326,644	+10,701	5.65
Saar district:								
Rhine Province	572,112	42,271	1,253	104	1,149	1,182	−33	2.07
Bavaria	80,946	[2] 9,328	[2] 2,614	[2] 23	2,591	1,006	+1,585	12.43
Areas ceded:								
From East Prussia—								
To Memel	141,238	63,191	1,727	172	1,555	1,464	+91	10.37
To Poland	24,787	23,215	495	63	432	312	+120	12.59
From West Prussia—								
To Danzig Free State	330,630	38,165	1,178	99	1,079	2,991	−1,912	9.05
To Poland	964,704	670,308	17,023	1,742	15,281	12,918	+2,363	13.39
From Posen to Poland	1,946,461	1,517,409	43,699	3,790	39,909	25,947	+13,962	13.33
From Pomerania to Poland	224							
From Upper Silesia—								
To Poland	893,074	106,080	2,759	237	2,522	4,487	−1,965	5.02
To Czechoslovakia	45,396	9,904	302	22	280	280		6.17
From Lower Silesia to Poland	26,248	24,137	672	54	618	319	+299	12.15
From Schleswig-Holstein to Denmark	166,348	28,911	1,531	75	1,456	1,116	+340	6.71
From Rhine Province to Belgium	60,003	5,955	156	15	141	245	−104	4.08
Alsace-Lorraine to France	1,874,014	135,005	3,476	331	3,145	2,994	+151	1.60
Total areas ceded	6,473,127	2,622,280	73,018	6,600	66,418	53,073	+13,345	8.20
Total Empire	64,925,993	15,387,199	445,222	37,719	407,503	381,905	+25,598	5.88
Per cent in ceded territory and in Saar		17.4	17.3	17.8	17.2	14.5	58.2	

Area and production, ceded areas: Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913 (Preussische Statistik, Nos. 221, 225, 230, 235, 240), supplemented by statistics prepared in the Preussisches Landesamt; Bavarian Saar, Bavaria, Statistisches Landesamt, Zeitschrift des Bayerischen Statistischen Landesamts, 1922, Nos. 3 and 4, p. 438.

[1] The quantities of surplus and deficit in each district as calculated from German official statistics have been corrected to such a degree that the total equals the average yearly import quantity.

[2] One year only, 1914.

About 10,700,000 bushels of the rye exported yearly by the German Empire before the war originated in the territories now composing the Republic of Germany, as indicated in Table 26. About 1,600,000 bushels originated in the Saar region, and the districts ceded to neighboring countries on the east produced an exportable surplus of rye amounting to more than 13,000,000 bushels. It must be borne in mind that these figures are only approximately correct, but they indicate that as a result of the war the German Government lost more than half of its potential exportable rye surplus. (Fig. 4.)

DESTINATION OF RYE EXPORTED BY THE GERMAN EMPIRE (1909–1913)

Germany's rye exports were made to Russia, Norway, Denmark, the Netherlands, Finland, France, Belgium, and other near-by countries. Most of Germany's rye imports were from Russia and Rumania, shipments from other countries being negligible, as shown in Table 28.

FIG. 4.—Average 1909–1913 production of rye in the German Empire balanced against disappearance

The districts represented by the solid black and shaded areas produced annually approximately 49,080,000 bushels more rye than was consumed locally. The regions of the southwest required approximately 23,982,000 bushels more rye than was produced locally to balance their local deficits. This left approximately 25,598,000 bushels annually available for export abroad. The surplus of the territories represented by the solid black areas approximately equaled the amount exported, and probably the bulk of the rye exported was grown in these regions. However, export rye may have originated in any part of the Empire.

STATISTICAL RYE BALANCES OF GERMANY (BOUNDARIES OF 1923)

For purposes of comparison, the pre-war rye data pertaining to the territories composed within the present boundaries of Germany are arranged in Table 27, bringing out the fact that before the war the territories within the boundaries of the Republic produced sufficient rye to meet their own requirements and had a very considerable surplus for export.

TABLE 27.—*Rye: Statistical balances, Germany, 1923 boundaries, 1921–22 to 1924–25, compared with pre-war average, 1909–10 to 1913–14*

Item	Unit	Year beginning July 1				
		Average 1909–1913	1921	1922	1923	1924 (preliminary)
Area sown	Acre	*Thousands* 12,713	*Thousands* 10,539	*Thousands* 10,237	*Thousands* 10,789	*Thousands* 10,525
Production	Bushel	368,337	267,648	206,033	263,037	225,573
Seed	do	30,992	26,041	25,291	26,651	26,000
Net production	do	337,345	241,607	180,742	236,386	199,573
Theoretical domestic requirement [1]	do	[2] 326,644	344,961	348,916	351,854	354,961
Theoretical surplus (+) or deficit (−)	do	[3]+10,701	−103,354	−168,174	−115,468	−155,388
Actual net imports	do	([4])	4,738	42,114	24,877	([5])
Uncovered deficit	do	----------	98,616	126,060	90,591	----------

[1] Based upon pre-war disappearance *norm*, 5.65 bushels times population. See Table 19 for populations.
[2] Normal disappearance.
[3] Available for export.
[4] Exports for Germany, 1923 boundaries, assumed to be same as the surplus.
[5] Not available for total year. During the six-months' period July 1 to December 31 Germany imported 15,759,000 bushels of rye, as compared with 14,674,000 bushels during the same period in 1923.

Since the war this situation has changed. Instead of having a considerable quantity of rye for export, the Republic has actually been forced to import rye to maintain her population.

More than 2,000,000 acres have gone out of cultivation and yields per acre have fallen off. The agricultural tariff, amounting practically to a bonus on rye exports, enabled German farmers, especially the large-estate operators, to put hundreds of thousands of acres of submarginal lands into rye. The German Government was partially recompensed by Russia through a premium that the latter Government paid on its rye flour imports originating in Germany. With the removal of the bonus, the cultivation of these submarginal lands became unprofitable and were allowed to revert to grass. Export prohibitions and various laws regulating the farmer's business to his disadvantage, grain requisitions, the chaotic economic conditions, and shortage of labor have contributed to cut down the rye acreage.

In spite of the fact that Germany is importing more rye than was formerly exported, official German statistics indicate that the people are still from a fourth to a third short of their former rye ration, as indicated in Table 27.

The striking feature of the rye situation is that each year following the war Germany's net rye production has shown a falling off of from 96,000,000 bushels in 1921 to 138,000,000 bushels in 1924. Taking into consideration the fact that the population in the territory comprised within the 1923 boundaries of the Republic has increased from 57,800,000 in 1910 to 62,825,000 in 1924, this reduced production and increased requirement has forced Germany to import large quantities of rye. The quantities of rye imported, with the countries of origin, and the quantities exported, with countries of destination, are given in Table 28.

TABLE 28.—*Rye, including rye flour in terms of rye: Foreign trade* [1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of bushels—000 omitted]

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923 [2]
United States	+178	+4,761	+35,930	7,201
Russia	[3]+7,832	(4)	(4)	(4)
Rumania	+1,040	(4)	(4)	(4)
Argentina	+127	+57	+668	(4)
Canada	(4)	+846	+1,880	(4)
Saar district		−879	−493	(4)
Hungary	−1,409	+20	+3	[5] 444
Austria	(6)	(4)	(4)	(4)
Czechoslovakia		−10	(4)	(4)
Belgium	−2,285	+9	(4)	(4)
France	−2,317	(4)	(4)	(4)
Finland	−3,733	(4)	(4)	(4)
Netherlands	−6,420	+17	(4)	(4)
Denmark	−6,525	(4)	(4)	(4)
Norway	−7,002	(4)	(4)	(4)
Other countries	−5,084	−83	+4,126	+17,232
Total	−25,598	+4,738	+42,114	+24,877

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).

[2] Imports only, except for other countries and total, which include the exports, if any, for countries given. The exports are not complete enough to compile a fiscal year by countries.

[3] The heavy importation of 13,698,000 bushels of rye from Russia accompanied by a reexport of 5,866,000 bushels, nearly 50 per cent, is due to the preferential trade agreement that Germany enjoyed with the Empire of the Romanoffs. Russia exported only about 30,000,000 bushels of rye yearly, most of which passed through the Black Sea ports. The Russo-German preferential trade agreement was so advantageous to the latter people that it proved profitable to purchase rye in the south of Russia and transport it by water to western Germany. At the same time rye flour was exported from eastern Germany to northern Russia.

[4] If any, included in other countries.

[5] Figure for rye flour only.

[6] Included in Hungary.

FUTURE OF GERMANY'S RYE TRADE

The present abandonment of more than 2,000,000 acres of rye lands is temporary, and a large part of this acreage will again be put into cultivation as improved economic conditions of the Republic render a stabilization of the agriculture possible. Governmental requisition, the removal of the export bonus, and the caprices of currency fluctuation and similar factors have been responsible in causing the German farmer to restrict his operations more nearly to the maintenance of his family and livestock rather than to produce a marketable surplus. This has been the case in many of the countries of central and eastern Europe during the past few years. But this situation, as far as Germany is concerned, is temporary (with the probable exception of the rye bonus) and the lost rye acreage will be largely regained, because the economic welfare of the Republic demands that agriculture be placed on a basis that will as nearly as possible supply the bread requirements of the population. German farms and farm equipment are in a relatively stronger position of potential production than before the war, and with the clearing up of the general economic situation the recovery of German agriculture will necessarily follow.

Although no reliable figures are available relative to the quantity of Russia's recent exports to Germany, nevertheless incomplete reports indicate that the Russian Government by concerted effort was able to assemble about 6,000,000 bushels for export to the western Republic during the season 1923–24. This was about 77 per cent of the quantity that Russia exported to Germany before the war under normal conditions of Russian production.

It is probable that these shipments of rye from Russia greatly tended to reduce purchases of rye from the United States by Germany. Our exports to Germany decreased from 36,000,000 bushels in 1922–23 to 7,000,000 bushels during 1923–24.

During the season 1924–25 poor crops in Russia practically eliminated this source of German supply. A poor crop yield at home, together with the increase in population, raised Germany's rye requirement (calculated on a basis of normal consumption) to about 40,000,000 bushels over the previous year. During the first six months from July 1 to December 31, 1924, Germany imported 11,000,000 bushels of rye from the United States, as compared with about 5,000,000 bushels during the corresponding period in 1923, indicating that we were again taking Russia's place in the German rye trade. All things considered, the rye trade of the United States with Germany is destined to diminish rapidly in proportion to the recovery of the rye area and production in Germany and to a lesser extent to the recovery of Russia, Germany's normal source of rye supply.

TABLE 29.—*Rye and rye flour: Imports into Germany by months, 1922–23 and 1923–24*

Year and month	Rye			Rye flour			Rye and flour in terms of rye [1]		
	Imports from—		Total	Imports from—		Total	Imports from—		Total
	United States	Other countries		United States	Other countries		United States	Other countries	
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*Barrels*	*Barrels*	*Barrels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1922–23:									
July	2,042	189	2,231	34	157	191	2,042	190	2,232
August	1,669	39	1,708	22	1,024	1,046	1,669	45	1,714
September	1,418	376	1,794	45	979	1,024	1,418	382	1,800
October	4,220	655	4,875	----------	461	461	4,220	658	4,878
November	4,648	501	5,149	22	304	326	4,648	503	5,151
December	3,439	305	3,744	11	304	315	3,439	307	3,746
January	7,288	276	7,564	787	1,114	1,901	7,293	283	7,576
February	2,796	193	2,989	34	585	619	2,796	197	2,993
March	3,281	228	3,509	----------	360	360	3,281	230	3,510
April	1,879	1,207	3,086	574	529	1,103	1,882	1,211	3,093
May	1,105	1,270	2,375	----------	1,361	1,361	1,105	1,278	2,383
June	2,138	1,556	3,694	----------	124	124	2,138	1,557	3,695
Total, 1922–23	35,923	6,795	42,718	1,529	7,302	8,831	35,931	6,841	42,771
1923–24:									
July	1,522	1,420	2,942	----------	427	427	1,522	1,423	2,945
August	909	1,209	2,118	1,114	3,588	4,702	916	1,230	2,146
September	874	1,029	1,903	----------	832	832	874	1,033	1,907
October	320	1,208	1,528	112	877	989	321	1,213	1,534
November	414	931	1,345	844	14,330	15,174	420	1,017	1,437
December	796	3,520	4,316	10,896	53,948	64,844	861	3,844	4,705
January	194	1,925	2,119	61,533	55,463	116,996	563	2,258	2,821
February	66	783	849	74,700	73,683	148,383	514	1,225	1,739
March	167	1,265	1,432	35,379	27,601	62,980	378	1,433	1,811
April	225	1,869	2,094	27,654	21,521	49,175	391	1,998	2,389
May	93	643	736	13,762	14,222	27,984	176	728	904
June	150	300	450	19,240	6,808	26,048	265	340	605
Total, 1923–24	5,730	16,102	21,832	245,234	273,300	518,534	7,201	17,742	24,943
1924:									
July	321	256	577	298,963	16,209	315,172	2,115	353	2,468
August	373	535	908	19,735	10,350	30,085	491	597	1,088
September	1,078	476	1,554	7,032	26,649	33,681	1,120	636	1,756
October	974	478	1,452	21,494	19,294	40,788	1,103	593	1,696
November	4,442	1,445	5,887	32,160	36,217	68,377	4,635	1,662	6,297
December	1,511	708	2,219	2,736	36,401	39,137	1,527	927	2,454

Germany: Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] One barrel of rye flour is the product of 6 bushels of rye.

SPELT (Includes Maslin [9])

In parts of Germany, more particularly in the regions where wheat is produced as a cash crop, the farmers employ spelt for home use in bread making. In France, Hungary, Austria, Czechoslovakia, and certain other countries the peasants plant a mixture of wheat and rye for use at home. This is to a certain extent a matter of dietary habit, but is much more a matter of economy. The use of spelt as a bread grain is customary in the Rhine provinces, northeastern Bavaria, Wurttemberg, Baden, Hesse, and to a lesser extent in Alsace-Lorraine.

The loss of Alsace-Lorraine did not perceptibly affect Germany's supply of bread grains grown for home consumption, as the amount grown was so small. In the other spelt-producing regions of the Republic the acreage has fallen off more than 50 per cent, the production in 1923 being only 37 per cent and in 1924 only 27 per cent of the 1909–1913 average of about 23,500,000 bushels (only about one-sixth of the pre-war wheat crop). This falling off in spelt production is the natural consequence of the general restriction of German agriculture to a more nearly home-maintenance basis. During the past few years the marketing of wheat has not been advantageous. As a result the German farmers have been eating more wheat and consequently have sown less spelt. With a return to normal conditions it is probable that more spelt will be grown, less wheat will be eaten at home, and relatively more locally grown wheat placed upon the market by these southern and western producers.

Before the war Germany exported to Switzerland and Austria-Hungary a few thousand bushels of spelt from contiguous territories. At present 2,000 to 3,000 bushels drift yearly across the southern and southwestern frontiers, but the demand for bread at home is sufficient to keep most of the diminished crop within the Republic to meet local food requirements.

Table 30 contrasts the present status of spelt production and utilization with the average pre-war condition of this crop.

TABLE 30.—*Spelt: Statistical balances, Germany, 1923 boundaries, 1921–22 to 1924–25, as compared with pre-war average, 1909–10 to 1913–14*

[In thousands—000 omitted]

Item	Unit	Years beginning July 1				
		Average, 1909–1913	1921	1922	1923	1924
Area	Acre	706	372	313	317	304
Production	Bushel	23,497	11,419	6,251	8,810	6,419
Seed	do	3,555	1,703	1,432	1,451	1,390
Production less seed	do	19,942	9,716	4,819	7,359	5,029
Exports less imports	do	95	1	2	4	
Quantity available for domestic use	do	19,847	9,715	4,817	7,355	

[9] Wheat and rye mixed. Alsace-Lorraine planted an average (1909–1913) of 1,090 acres, producing 21,932 bushels of meteil.

The significance of spelt is that the more of this grain that is produced the more wheat will be liberated from the farms for shipment to neighboring markets. In proportion as this cereal is not cultivated more wheat is retained on the farms for home consumption.

BARLEY

Barley is used in Germany mainly for brewing and as a feed for livestock. The home-grown summer barley of the two-row varieties is preferred for brewing because of its small percentage of protein and high yield of malt extract. Most of the barley grown in Germany is of this type. Official records of the area sown to winter barley were not kept separately during the pre-war period in all parts of the Empire, so that it is possible only to estimate roughly the relative area of each. This estimate is placed at 3 per cent winter barley to 97 per cent spring barley. The winter barley, mostly of the four-row varieties, has a higher protein content and is used for livestock feeding. To a lesser extent it is used for industrial purposes, for green fertilizer, and for the manufacture of French (pearled) barley for use in soups and for other culinary purposes.

Doctor Warmbold has estimated that before the war about a third of Germany's total barley supply, including the home-grown and imported, was employed for brewing. The residue from malt and beer manufacture, together with the offal from pearled barley and grits, all of which was fed to stock, was equivalent to about an eighth of this total supply.

On the average, nearly two-thirds of Germany's total barley supply was fed as grain to livestock. These proportions varied considerably from year to year, depending upon the available supply and upon the quantities of other available feed produced not only in Germany but in other countries. Corn and potato supplies and prices were influential in determining the extent to which barley was employed as a feed for stock. Year in and year out Germany's barley imports equaled the quantity of spring barley produced.

EFFECT OF VERSAILLES TREATY ON BARLEY SITUATION

Germany ceded to Poland territories that produced an annual average of 14,800,000 bushels of barley. Danzig Free State, Memel, and the district of Upper Silesia ceded to Czechoslovakia produced about 2,000,000 bushels. The surplus of these eastern districts was shipped to the interior of the Empire. On the west, Alsace-Lorraine produced 4,200,000 bushels of barley, having a surplus that was shipped east to the interior provinces. The Saar was a deficit district, while the territories ceded to Belgium and Denmark produced small quantities of barley that were probably consumed locally.

It is impossible to calculate the actual amount of this surplus, because of the varying degree to which this cereal was employed from year to year for feeding on the home farm or for industrial purposes, but within the present boundaries of the Republic of Germany an amount of barley was consumed each year considerably greater than the local production plus the total import of the Empire. In the northern parts of the Empire, where potato production is favored by the conditions of both soil and climate, but little barley was fed in good potato years or in years when imported maize was cheap. The lack of regularity with which this fodder grain was used in all sections

of the country makes it impossible to work out with any degree of accuracy a balance between local production and disappearance, but Table 31 gives the areas sown and the net production in the Republic and in each of the districts ceded to neighboring countries.

TABLE 31.—*Barley: Average area and production in the districts which composed the former German Empire, 1909–1913*

District	Area	Production	Seed	Net production
Barley, summer:	*Acres*	*Bushels*	*Bushels*	*Bushels*
Germany, 1923 boundaries	3,347,933	128,799,163	9,464,164	119,334,999
Saar District—				
Rhine Province	4,067	149,270	11,482	137,788
Bavaria	586	[1] 28,476	[1] 1,837	[1] 26,639
Areas ceded—				
From East Prussia—				
To Memel	18,977	608,561	58,330	550,231
To Poland	3,442	91,399	10,564	80,835
From West Prussia—				
To Danzig Free State	25,874	1,327,353	75,783	1,251,570
To Poland	113,179	4,272,331	332,527	3,939,804
From Posen to Poland	280,673	11,112,562	818,456	10,294,106
From Upper Silesia—				
To Poland	11,016	386,264	27,558	358,706
To Czechoslovakia	4,991	203,926	12,401	191,525
From Lower Silesia to Poland	1,987	78,539	5,052	73,487
From Schleswig-Holstein to Denmark	42,019	1,854,620	123,549	1,731,071
From Rhine Province to Belgium	42	1,378		1,378
From Alsace-Lorraine to France	121,363	4,615,422	343,093	4,272,329
Total areas ceded	623,563	24,552,355	1,807,313	22,745,042
Total Empire	3,976,149	153,529,264	11,284,796	142,244,468
Barley, winter: [2] Total Empire	116,137	4,987,908	323,801	4,664,107
Barley, winter and summer: Total Empire	4,092,286	158,517,172	11,608,597	146,908,575

Area and production, Bavarian Saar: Bavaria, Statistisches Landesamt, Zeitschrift des Bayerischen Statistischen Landesamts, 1922, Nos. 3 and 4, p. 438.

Areas lost: Germany, Kaiserliches Statistisches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, 1910–1914, heft 1; Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913 (Preussische Statistik, Nos. 221, 225, 230, 235, 240); unpublished statistics prepared in the Preussisches Landesamt.

[1] One year only, 1914. Figures include winter barley.
[2] Estimate for one year, 1913. No basis for estimate for earlier years.

An estimate of the production-consumption balance of the barley crop for recent years, based on German official figures as compared with the pre-war estimate, is given in Table 32.

TABLE 32.—*Barley: Statistical balances, Germany, 1923 boundaries, 1921–22 to 1924–25, as compared with pre-war average, 1909–10 to 1913–14*

[In thousands—000 omitted]

Item	Unit	Years beginning July 1				
		Average, 1909–1913	1921	1922	1923	1924
Area	Acre	3,464	3,114	3,103	3,216	3,571
Production	Bushel	133,787	101,449	80,754	108,446	110,226
Seed	do	9,699	8,685	8,653	8,960	9,999
Production less seed	do	124,088	92,764	72,101	99,486	100,227
Imports less exports	do	[1] 141,475	10,911	13,006	23,072	
Quantity available for domestic use	do	265,563	103,675	85,107	122,558	

[1] Imports for the total Empire. In addition to this import from abroad Alsace-Lorraine and the German districts now incorporated into Poland shipped considerable quantities of barley to the districts now composing the Republic.

ORIGIN OF BARLEY IMPORTED TO COVER DEFICIT (1909–1913)

The pre-war imports were supplied almost entirely by Russia. This barley, grown under conditions of little rainfall, had a high protein content and was well suited to feeding livestock. Austria-Hungary and Rumania together supplied about 7 per cent of the imports and all other countries about 6 per cent. The United States was not an important source of Germany's barley supply—only a little over 1 per cent.

Table 33 contrasts the Republic's postwar international trade in barley with the pre-war trade of the Empire, all of which and more was consumed within the present boundaries of the Republic.

TABLE 33.—*Barley: Foreign trade* [1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of bushels—000 omitted]

Country	Years beginning July 1			
	Average, 1909–1913	1921	1922	1923
United States	+1,831	+1,271	+2,220	+3,472
Russia	+122,310	(2)	(2)	(2)
Austria	+6,217	+110	(2)	(2)
Hungary	(3)	+64	(2)	(2)
Czechoslovakia		+434	+2,657	+1,918
Rumania	+3,811	+3,446	+5,777	+6,506
British India	+2,828	(2)	(2)	(2)
Denmark	+1,280	+1,272	+211	(2)
Morocco	+999	+1,190	+86	(2)
Argentina	+273	+811	+443	(2)
Algeria	+60	+134	(2)	(2)
Netherlands	+22	+27	(2)	(2)
Tunis	+9	+503	+3	(2)
Saar district		−185	−111	(2)
Other countries	+1,835	+1,834	+1,720	+11,176
Total	+141,475	+10,911	+13,006	+23,072

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in "Other countries."
[3] Included in Austria.

Imports of barley were largely for purposes of stock feeding. In 1922–23 these imports were only about 9 per cent and in 1923–24 they were but 16.3 of the 1909–13 average. The acreage of home-grown brewing barley has been maintained, and if allowance is made for pre-war overestimates and post-war underestimates, these figures indicate that German barley production has not lost ground to a very noticeable degree except for the poor crop year 1922 (trade year 1922–23). Indeed, the acreage in 1924 was more than 100,000 acres above the pre-war average.

The large decrease in Germany's imports since the war has been due to the shutting off of the Russian source of cheap supply. A very small quantity of Russian barley originated in Congress Poland, but more than 100,000,000 bushels were brought by boat from the ports of the Black Sea. It is reported that during the last season (1923–24) Russia shipped to Germany only a relatively small quantity of barley. Rumania has nearly doubled her pre-war exports of

barley to Germany, as a result of the expansion of barley acreage in that country. Russian barley exports may be expected to increase and those from Rumania to continue in importance, since barley is a favorite grain in peasant agriculture, just as wheat was the favored cereal on the large estates of these two countries. America's export of barley to Germany, though double the pre-war quantity, is not significant.

FIG. 5.—Average 1909–1913 production of oats in the German Empire balanced against disappearance

The shaded areas roughly indicate the districts in which local production exceeded local consumption by about 38,059,000 bushels annually. In northwest and central Germany was a region (roughly indicated by the unshaded areas) in which local production fell short of supplying local requirements by about 47,791,000 bushels. The net annual deficit of the entire Empire covered by importations from abroad amounted to about 9,732,000 bushels annually.

Germany's crop for the season of 1924–25, according to the estimate of January 5, is 1,780,000 bushels larger than that for last year. With increasing numbers of livestock, particularly hogs, it is probable that Germany's demand for feeding barley will increase and with a stabilization of her currency her ability to purchase abroad will improve. But with Russia coming back into the market it is to be expected that Germany will turn as far as possible to her former source of supply to meet her future needs.

OATS

Oats are the chief fodder grain in Germany. Production is fairly uniformly distributed throughout the country. Consumption is centralized more in the western districts, and the surplus production of the east is shipped west to help supply the deficit of these districts. Oat production in Germany very nearly balanced consumption, before the war the Empire importing only about 2 per cent of its supply from foreign sources.

VERSAILLES TREATY AND GERMANY'S OAT SITUATION

Germany ceded to Poland territories that produced an annual average surplus (1909–1913) of about 1,300,000 bushels of oats. Memel, Danzig Free State, and the district of Upper Silesia ceded to Czechoslovakia produced annual surpluses totaling 600,000 bushels. On the west Alsace-Lorraine and the Saar district were deficit regions requiring approximately 2,000,000 and 1,400,000 bushels, respectively, in addition to local production. The districts ceded to Belgium and to Denmark, on the other hand, produced light surpluses of about 800,000 bushels.

The estimated average statistical oat deficit (1909–1913) of the territories now comprised within the Republic of Germany was 9,160,000 bushels, as compared with 9,700,000 bushels for the whole Empire (fig. 5) showing a potential net gain to Germany's national balance sheet of 570,000 bushels as a result of the territorial changes effected by the Versailles treaty, indicated in Table 34.

TABLE 34.—*Oats: Average approximate balance in the districts which composed the former German Empire, 1909–1913*

District	Number of horses, 1913	Area	Production	Seed	Net production	Disappearance	Deficit (−) or surplus (+)[1]	Disappearance per horse
		1,000 acres	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*Bushels*
Germany 1923 boundaries	3,807,057	9,529	527,178	40,066	487,112	496,272	−9,160	130.36
Saar District:								
Rhine Province	17,443	32	1,554	138	1,416	2,921	−1,505	167.46
Bavaria	2,917	[2] 9	[2] 805	[2] 39	766	618	+148	211.86
Areas ceded:								
From East Prussia—								
To Memel	33,507	62	3,077	294	2,783	2,346	+437	70.02
To Poland	5,968	4	139	19	120	326	−206	54.62
From West Prussia—								
To Danzig Free State	40,667	46	3,235	207	3,028	2,851	+177	70.11
To Poland	154,784	213	10,401	970	9,431	10,340	−909	66.80
From Posen to Poland	283,443	361	20,058	2,147	17,911	15,473	+2,438	54.59
From Upper Silesia—								
To Poland	28,510	79	3,850	307	3,543	3,631	−88	127.36
To Czechoslovakia	3,386	8	481	31	450	438	+12	129.36
From Lower Silesia to Poland	3,888	11	628	44	584	519	+65	133.49
From Schleswig-Holstein to Denmark	37,992	102	6,846	466	6,380	5,645	+735	148.58
From Rhine Province to Belgium	1,883	10	560	43	517	404	+113	214.55
Alsace-Lorraine to France	136,884	284	13,184	[3] 792	12,392	14,381	−1,989	105.06
Total areas ceded	730,912	1,180	62,459	5,320	57,139	56,354	+785	77.10
Total Empire	4,558,329	10,750	591,996	45,563	546,433	556,165	−9,732	122.01
Per cent in ceded territory and in Saar	16.5	11.4	10.9	12.1	10.9	10.8	5.9	

Area and production: Germany, Kaiserliches Statistiches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, 1910–1914, heft 1; Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913 (Preussische Statistik, Nos. 221, 225, 230, 235, 240).
Seed: Germany, Kaiserliches Statistisches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, 1915, heft 2, and unpublished indications of Professor Opitz, of the Berlin Landwirtschaftliche Hochschule.

[1] The quantities of surplus and deficit in each district as calculated from German official statistics have been corrected to such a degree that the total equals the average yearly import quantity.
[2] Figures for the single year 1914.
[3] 2.79 bushels per acre; Zade, Adolph. Der Hafer; Jena, Gustav Fischer, 1918, p. 124.

ORIGIN OF OATS IMPORTED TO COVER PRE-WAR DEFICIT (1909–1913)

Before the war Germany imported four times the quantity of oats required to balance her own deficit, conducting a transit trade between western Europe and Rumania and Russia, from which latter

country was imported 26,000,000 bushels annually, for the most part by way of the Baltic ports. About 7,000,000 bushels of oats from the Argentine and 2,000,000 from the United States also passed through Hamburg and Bremen, or were reshipped, largely to Great Britain. (See Table 35.)

TABLE 35.—*Oats: Foreign trade [1] of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of bushels—000 omitted]

Country	Year beginning July 1			
	Average, 1909–1913	1921	1922	1923
Argentina	+7,105	+3,938	+565	+739
United States	+1,828	+1,762	+4,587	+165
Rumania	+1,654	+368	+736	+33
Russia	+26,095	(3)	(2)	(2)
German Southwest Africa	−209	(2)	(2)	(2)
Norway	−271	(2)	(2)	(2)
Austria-Hungary	−431	−3 1	(2)	(2)
Belgium	−1,435	(2)	(2)	(2)
France	−2,370	−2	(2)	(2)
Sweden	−2,778	+12	(3)	(2)
Canada	(2)	+11	(2)	(2)
Netherlands	−3,837	+29	(2)	(2)
Denmark	−4,535	(3)	(2)	(2)
Switzerland	−4,771	−18	(2)	(2)
Great Britain	−6,687	(3)	(2)	(2)
Saar district		−435	−86	(2)
Others	+374	+589	+1,207	−5,314
Total	+9,732	+6,253	+7,009	−4,377

Germany. Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Austria only.

POSTWAR TRADE IN OATS

Since the war the production of oats has fallen off in the territory still remaining to Germany. The 1924 area, which is the largest in the last four years, is still 9 per cent below pre-war, according to the German official estimates. German statistics indictate that production in 1923, the best postwar year up to that time, was 20 per cent below the pre-war level. Not allowing for pre-war overestimates and postwar underestimates, present production (in 1924) was 138,000,000 bushels below pre-war. In spite of the fact that the domestic supply lacked 109,000,000 bushels of enough to provide for a horse ration as great as pre-war, some oats were exported in 1923–24.

Imports of oats into Germany since the war have decreased. The Empire bought abroad, on an average, 9,700,000 bushels a year more than were reexported (Table 35). In 1921–22 and 1922–23 these purchases for the Republic were only 6,300,000 and 7,000,000 bushels, respectively; in 1923–24 the import movement was changed to an export of 4,400,000 bushels.

The foreign sources of supply, as well as the quantities imported from previous sources, have changed. Before the war Argentina supplied the equivalent of nearly the total German import requirement. Russia shipped to Germany three times the Empire's total import requirement; but this was mostly reexported to Great Britain,

Switzerland, Denmark, Sweden, and Holland. Since the war Russia has dropped out entirely. Imports from Argentina in 1921–22 were not quite two-thirds the pre-war purchases, and in the last two years they have dropped to 8 and 10 per cent of pre-war. Neighboring countries, which used to take small quantities of oats, reexported from Germany, have been shipping oats to Germany since the war. In 1923–24 imports from all countries were insignificant and exports predominated.

The United States has usually been one of the minor sources of the German oats supply. In 1922–23 Germany took between two and three times the usual quantity from the United States, owing to the short crop and consequent small surplus in Argentina. In 1923–24, with Germany exporting some of her own oats, she took only 165,000 bushels from the United States.

STATISTICAL OATS BALANCE OF GERMANY

Table 36 gives a comparison between the post-war production-consumption balance and the years preceding the war, based on the German official figures:

TABLE 36.—*Oats: Statistical balances, Germany, 1923 boundaries, 1921–22 to 1924–25, as compared with pre-war average, 1909–10 to 1913–14*

[In thousands—000 omitted]

Item	Unit	Average, 1909–1913	Year beginning July 1			
			1921	1922	1923	1924
Area sown	Acre	9,529	7,814	7,912	8,265	8,709
Production	Bushel	527,178	344,812	276,643	420,731	389,525
Seed	do	40,066	33,768	34,192	35,704	37,636
Net production	do	487,112	311,044	242,451	385,027	351,889
Theoretical domestic requirement [1]	do	496,272	477,885	481,144	494,180	507,085
Theoretical deficit	do	−9,160	−166,841	−238,693	−109,153	−155,196
Actual net imports (+) or net exports (−)	do	(2)	+6,253	+7,009	−4,377	
Uncovered deficit	do		160,588	231,684	113,530	

[1] Based upon pre-war disappearance norm, 130.356, times number of horses. Number of horses in 1913, 3,897,000; 1921, 3,666,000; 1922, 3,691,000; 1923, 3,791,000 (estimated); and 1924, 3,890,000, including 40,000 military horses.

[2] Imports for Germany, 1923 boundaries, assumed to be same as the deficit.

It is evident that since the war horses in Germany have been fed oats rations of about two-thirds the pre-war normal. Basing post-war requirement upon the pre-war normal ration, Germany has had during the past four years a deficit ranging from 109,000,000 to 239,000,000 bushels yearly. Importations have not been more than 3 to 4 per cent of the requirement. During the season 1924–25 the indicated deficit is 155,000,000 bushels. It is improbable that any considerable portion of this deficit will be imported.

POTATOES

The commercial potato crop in the German Republic, even during the post-war depression in agriculture, has been greater than that of any other country in the world. During the pre-war period (1909–1913) almost one-half of the potato crop of the Empire was produced

in the six eastern provinces—East Prussia, West Prussia, Pomerania, Posen, Brandenburg, and Silesia. But most of the great distilleries, the starch factories, and the desiccators were located in these provinces, and almost the whole of the local potato crop except that which was consumed as human food or fed to livestock was locally manufactured into spirit and starch or was desiccated. Only the relatively small average quantity of 3,000,000 bushels was shipped from these six provinces to the deficit regions of the south and west, and these shipments were nearly covered by annual imports from Congress Poland on the east.

Hanover and the provinces to the north produced a surplus of about 9,000,000 bushels annually that was shipped to Westphalia, Thuringia, Saxony, and the districts to the south, whose combined deficit reached about 23,000,000 bushels. This left about 11,000,000 bushels deficit to be covered by imports from abroad, Westphalia, Alsace-Lorraine, and the Rhine provinces importing potatoes from the Netherlands, Belgium, and Italy.

The pre-war distribution of the potato crop is indicated in Table 37 prepared from estimates published by the Bureau of Economics of the German Ministry of Foods:[10]

TABLE 37.—*Potatoes: Utilization of the German pre-war crop, 1914*

Use	Total Germany	Six eastern provinces [1]
	Million bushels	*Million bushels*
Seed	249.9	113.9
Food	543.8	183.7
Drying	55.1	40.4
Starch	47.8	47.8
Alcohol	99.2	84.5
Waste (10 per cent)	169.0	80.8
Other uses (probably mostly feeding)	510.7	257.2
Total crop, 1914	1,675.5	808.3
Average 1909–1913:		
Crop	1,682.8	830.4
Imports less exports	10.9	[2] −3.7
Available for disposition	1,693.7	826.7

[1] East Prussia, West Prussia, Brandenburg, Pomerania, Posen, and Silesia.
[2] Average surplus entering into interior trade, 1912–13, as reported by the Statistisches Reichsamt, in Statistik der Gueterbewegung auf Deutschen Eisenbahnen and Verkehr und Wasserstände der Deutschen Binnenwasserstrassen for 1912 and 1913 (Statistik der Deutschen Reichs, Bd. 265, 274).

The relative quantities of potatoes used for human food, feed for livestock, or used for industrial purposes varied greatly from year to year. The crops in the years immediately preceding the war were utilized approximately in the following proportions: Seed, 15 per cent; human food, 33 per cent; drying, 3 per cent; starch, 3 per cent; alcohol, 6 per cent; waste, 10 per cent; and other uses, principally feeding, 30 per cent. In times of shortage in the grain crop a larger proportion of the potato crop was used for human food. The average pre-war consumption for human food was estimated at 8½ bushels per capita. In general, before the war, Germany just about met its own potato requirements, and imports have been comparatively small (about 0.7 per cent of the total production) even in years of shortage.

[10] Volkswirtschaftliche Abteilung des Reichsernaehrungsamts: Beitraege zur Kreigswirtschaft, Kartoffel Trocknerei im Kriege, prepared by Professor Lautenbach, Berlin.

EFFECT OF VERSALILES TREATY ON POTATO SITUATION

Germany ceded to Poland some of her best potato lands, producing an annual average surplus (1909–1913) of about 15,000,000 bushels. The ceded districts of Upper Silesia, Memel, and Danzig were deficit regions in which the potato disappearance, for food and for industrial purposes, exceeded local production by about 21,500,000 bushels. On the west, Alsace-Lorraine, the Saar district, and the territory ceded to Denmark were deficit regions requiring about 3,000,000 bushels annually in addition to local production.

The estimated average statistical potato deficit (1909–1913) of the territories now comprised within the Republic of Germany was 1,400,000 bushels, as compared with 10,874,000 bushels, which was the average importation into the German Empire. (Fig. 6.)

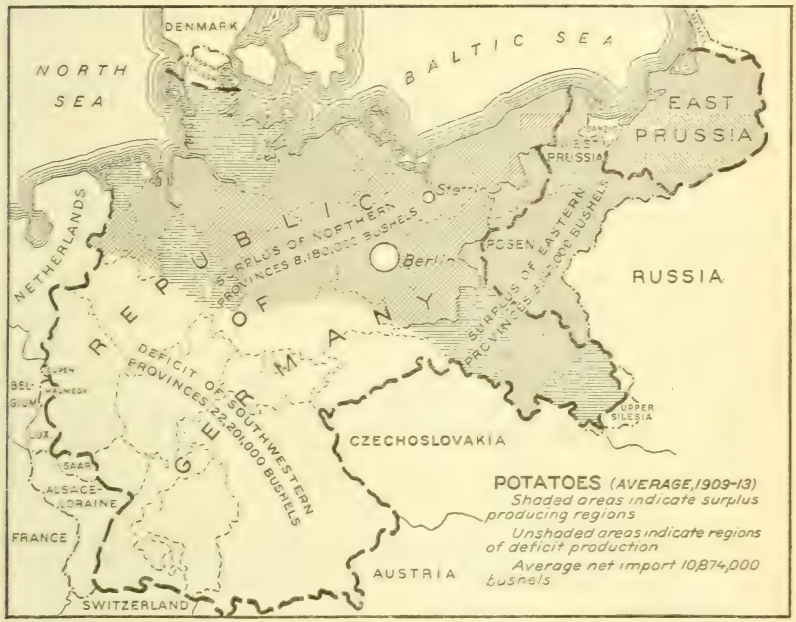

FIG. 6.—Average 1909–1913 production of potatoes in the German Empire balanced against disappearance

The eastern Provinces produced annually approximately 3,147,000 bushels more potatoes than were consumed locally, while the annual surplus of the northern Provinces amounted to about 8,180,000 bushels. The southwestern deficit region consumed each year about 22,201,000 bushels more than were produced locally, necessitating an annual average importation of potatoes totaling about 10,874,000 bushels.

It is estimated that the ceded territories and the Saar district required in addition to local production an annual net importation of about 9,000,000 bushels of potatoes of which about 2,000,000 bushels were consumed as human food and feed for livestock and the 7,000,000 bushels were used for industrial purposes.

The territorial changes following the Great War did not materially affect the German potato industry either as regards surplus production or manufacture.

The statistical analysis of the pre-war potato situation in the ceded districts and in the territory now comprising the Republic of Germany appear in Table 38.

TABLE 38.—*Potatoes: Average approximate balance in the districts which composed the former German Empire, 1909–1913*

District	Population December 1, 1910	Area	Production	Seed	Net production	Disappearance	Surplus (+) or deficit (−)[1]	Disappearance per capita
		1,000 acres	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*Bushels*
Germany, 1923 boundary	57,799,808	6,775	1,373,609	201,474	1,172,135	1,173,498	−1,363	20.30
Saar district:								
Rhine Province	572,112	45	7,749	1,332	6,417	7,689	−1,272	13.44
Bavaria	80,946	[2] 12	[2] 2,512	[2] 368	2,144	1,336	+808	16.50
Areas ceded:								
From East Prussia—								
To Memel	141,238	32	2,995	939	2,056	4,551	−2,495	32.22
To Poland	24,787	10	5,940	292	5,648	1,863	+3,785	75.16
From West Prussia—								
To Danzig Free State	330,630	22	4,671	667	4,004	14,059	−10,055	42.52
To Poland	964,704	332	70,160	9,875	60,285	50,809	+9,476	52.67
From Posen to Poland	1,946,461	663	152,204	19,723	132,481	132,174	+307	67.90
From Upper Silesia—								
To Poland	893,074	96	17,610	2,870	14,740	23,645	−8,905	26.48
To Czechoslovakia	45,396	7	1,477	214	1,263	1,306	−43	28.77
From Lower Silesia to Poland	26,248	13	2,821	382	2,439	1,099	+1,340	41.87
From Schleswig-Holstein to Denmark	166,348	10	1,777	285	1,492	2,599	−1,107	15.62
From Rhine Province to Belgium	60,003	5	1,018	157	861	844	+17	14.07
From Pomerania to Poland	224							
Alsace-Lorraine to France	1,874,014	229	37,416	6,798	30,618	31,985	−1,367	17.07
Total areas ceded	6,473,127	1,419	298,089	42,202	255,887	264,934	−9,047	40.93
Total Empire	64,925,993	8,251	1,681,959	245,376	1,436,583	[3] 1,447,457	−10,874	22.29
Per cent in ceded territory and Saar		17.9	18.3	17.9	18.4	18.9	87.5	

Area and production: Total German Empire—Germany, Kaiserliches Statistisches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, 1910–1914, heft. 1; Bavarian Saar—Bavaria, Statistisches Landesamt. Zeitschrift des Bayerischen Statistischen Landesamts, 1922, Nos. 3 and 4, p. 438.
Ceded areas in Prussia: Königlich Preussisches Statistisches Landesamt; unpublished statistics prepared in the Landesamt.
Seed requirements, Germany. Kaiserliches Statistisches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, vol. 24, heft 2, 1915, p. 216.

NOTE.—The uses of potatoes are so varied and so changing that the per capita disappearance should be considered only as a convenient method of estimating general disappearance.

[1] The amounts of surplus and deficit in each district as calculated from German official statistics have been corrected to such a degree that the total equals the average yearly import amount.
[2] One year only, 1914.
[3] Based on a disappearance for the northern region, which excludes the ocean trade of Bremen and Hamburg, Germany.

STATISTICAL POTATO BALANCE OF GERMANY

The area planted to potatoes within the territory of the Republic since the war has not varied materially from the acreage under this crop before the war. (Table 39.) The yields have fluctuated considerably with the seasons, being low in 1921 and 1923 and high in 1922; the net production of 1924 was about 40,000,000 bushels below the 1909–1913 average. The food requirement has increased

with the increase in population, and it is probable that the per capita consumption has also increased materially, since potatoes have been substituted for wheat and rye which were both scarce and expensive. During the years 1921–22 and 1923–24 the quantities of domestic potatoes available for industrial purposes and for feeding livestock have been considerably below the average for the pre-war period (1909–1913) and during 1923–24 importations rose to nearly 8,500,000 bushels. The season 1924–25 shows an increased production of 140,000,000 bushels more than the preceding year and it is probable that imports will decrease in volume. The Netherlands and Belgium will continue to ship some potatoes into the western provinces, where trade relationships have been long established: on the east, Polish territory contiguous to alcohol and starch manufactories will continue to ship potatoes over the boundary into Germany.

TABLE 39.—*Potatoes: Statistical balances, Germany, 1923 boundaries, 1921–22 to 1924–25, as compared with pre-war average, 1909–10 to 1913–14*

[In thousands—000 omitted]

Item	Unit	Year beginning July 1				
		Average 1909–1913	1921	1922	1923	1924
Area sown	Acres	6,775	6,541	6,725	6,738	6,820
Production	Bushels	1,373,609	960,888	1,494,005	1,197,095	1,337,540
Seed	do	201,474	194,531	199,998	200,300	204,800
Net production	do	1,172,135	766,357	1,294,007	996,795	1,132,740
Theoretical domestic requirement [1]	do	491,298	518,968	524,918	529,300	534,000
Theoretical surplus	do	680,837	247,389	769,089	467,495	598,740
Actual net imports	do	[2] 1,363	1,376	2,936	8,478	([3])
Total available	do	682,200	248,765	772,025	475,973	

[1] Based upon pre-war disappearance norm, 8.5 bushels, times population. See Table 19 for population.
[2] Estimated for the Republic.
[3] Total year not available.

ORIGIN OF POTATOES IMPORTED TO COVER PRE-WAR DEFICIT (1909–1913)

Germany's small import and export trade in potatoes was confined largely to local transactions along the frontiers. On the east a few million bushels were shipped from Russia and Austria to near-by factories and distilleries, and on the west and south a few million bushels were shipped in from the Netherlands, Belgium, France Italy, and Austria. Likewise local producers shipped potatoes in small quantities to Austria, Switzerland, and England. (Table 40.)

TABLE 40.—*Potatoes: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of bushels—000 omitted]

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923
Russia	+4,778	(2)	(2)	(2)
Italy	+1,264	+540	+229	[3] 1,038
Denmark	+300	+18	(2)	(2)
France	−500	(2)	(2)	(2)
Great Britain	−1,176	(2)	(2)	(2)
Austria-Hungary	−1,352	[4] −261	[4] −345	(2)
Netherlands	+8,164	+1,282	+1,342	[3] 4,170
Poland		+755	+2,008	[3] 3,069
Memel		+649	+126	(2)
Latvia, Esthonia, and Lithuania		+351	(2)	(2)
Czechoslovakia		−9	(2)	(2)
Polish Upper Silesia		(2)	+559	(2)
Belgium	+2,210	+141	+768	(2)
United States	−12	(2)	(2)	(2)
Norway	−148	(2)	(2)	(2)
Brazil	−183	(2)	(2)	(2)
Sweden	−362	(2)	(2)	(2)
Switzerland	−1,987	(2)	(2)	(2)
Saar district		−2,244	−1,782	(2)
Other countries	−122	+154	+31	+201
Total	+10,874	+1,376	+2,936	+8,478

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports all indicted by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Imports only; exports, if any, included in other countries.
[4] Austria only.

POSTWAR FOREIGN TRADE IN POTATOES

The western provinces have continued to import relatively small quantities of potatoes from the Netherlands, Belgium, and Italy, and have exported some potatoes to the Saar district, while the factories and distilleries in the eastern provinces have imported small quantities of potatoes from Memel and Poland. In 1923–24 the foreign potato trade of the Republic increased greatly because of the poor domestic crop. The western provinces imported 4,000,000 bushels from the Netherlands for food and the eastern provinces took 3,000,000 bushels from Poland largely for industrial purposes. (Table 40.)

SUGAR BEETS AND SUGAR

Beginning with 1850, the sugar-beet industry shows a continuous and rapid development up to the outbreak of the World War. The raw-sugar production increased from 59,000 short tons in 1850–51 to 2,994,000 short tons in 1913–14. Germany became a sugar exporting country about 1871, when the exports exceeded imports by a round 21,000 short tons. From that time until the season of 1917–18 Germany's exports continued to be greater than her imports, reaching a maximum in the season 1910–11, when the net export reached 1,228,715 short tons. The sugar sent abroad went chiefly to England.

Consumption as measured by internal sugar disappearance, increased from 6.6 pounds per capita in 1850–51 to a pre-war average of 45 pounds. During the war period the sugar disappearance in Germany appears to have been greater than at any other time, averaging 49.6 pounds per capita for the five sugar seasons 1914–15 to 1918–19.

The general facts concerning the supply and disappearance of sugar in the Empire of Germany appear in Table 41.

TABLE 41.—*Sugar, in terms of raw sugar: Supply and disappearance in the German Empire, 1850–1851 to 1918–19*

[Thousands of pounds—000 omitted]

Year beginning Sept. 1	Sugar produced	Imports	Exports	Disappearance	
				Total	Per capita (pounds)
1850	117,613	86,453	20,483	212,304	6.6
1860	278,939	18,571	5,618	282,288	9.2
1870	579,780	9,427	51,132	538,076	11.0
1880	1,225,570	12,362	625,901	612,038	15.0
1890	2,945,834	14,906	1,653,949	1,155,105	23.2
1900	4,363,164	2,970	2,517,434	1,706,290	30.1
1909 [1]	4,583,851	4,860	1,711,177	2,783,445	42.9
1910	5,709,625	4,083	2,461,514	3,051,001	46.7
1911	3,301,880	4,904	615,030	2,743,360	41.5
1912	5,966,369	5,605	2,332,956	3,149,575	47.1
1913	5,987,407	5,031	2,436,157	3,158,686	46.6
Average, 1909–1913	5,109,826	4,897	1,911,367	2,977,213	45.0
1914	5,533,770	37,137	355,354	3,749,690	55.4
1915	3,340,667	21,482	85,580	3,771,013	55.3
1916	3,434,612	14,500	22,891	2,953,135	43.4
1917	3,397,424	23,173	31,575	3,278,595	48.4
1918	2,927,079	86,867	17,886	2,866,343	45.6
Average, 1914–1918	3,726,710	36,632	102,657	3,323,755	49.6

Deutsche Zuckerindustrie. vol. 48, No. 6, Feb. 9, 1923, p. 76.

[1] Deutsche Zuckerindustrie, vol. 35, No. 41, Oct. 14, 1910, p. 798.

TABLE 42.—*Sugar, in terms of raw sugar:*[1] *Foreign trade of Germany, average 1909–1913*

Country	Imports (+)	Exports (−)	Net exports
	Short tons	*Short tons*	*Short tons*
United States	461	8,827	8,366
Morocco		9,674	9,674
Portugal		9,969	9,969
Chile		11,614	11,614
Denmark	1	16,394	16,393
Netherlands	71	19,305	19,234
Uruguay		21,151	21,151
Argentina		28,678	28,678
Switzerland		37,612	37,612
Norway		44,694	44,694
Great Britain	442	666,458	666,016
Other countries	4,593	62,426	57,833
Total	+5,568	−936,802	−931,234

Germany, Kaiserliches Statistisches Amt, Monatliche Nachweise über den Auwärtigen Handel Deutschlands.

[1] Refined sugar reduced to raw sugar at the ratio of 9 : 10.

During the five-year period 1909–10 to 1913–14 the area planted to sugar beets varied considerably from year to year, and the fluctuations in yield were even greater; but on the average 1,245,797 acres were put into cultivation annually and more than 300 sugar factories worked up about 15,715,229 short tons of beets, producing 2,460,407 short tons of raw sugar. In addition to the sugar made directly from beets, independent factories manufactured some 94,506 tons of sugar

from molasses, resulting in a gross sugar production of 2,554,913 short tons. Of this quantity, the average net export as reported by the German sugar industry was 953,235 tons,[11] the average yearly total supply available for use within the country being 1,488,607 tons (about 45 pounds per capita), of which 502,000 tons, or 33.7 per cent, were used yearly for industrial purposes, leaving 66.3 per cent, or 986,607 short tons, available for human consumption.

EFFECT OF VERSAILLES TREATY ON BEET-SUGAR INDUSTRY

Lack of consecutive detailed data makes it impossible to analyze the average pre-war relations of the beet-sugar industry of the ceded districts and of the area now comprised within the Republic of Germany, but statistics have been compiled by the Deutsche Zuckerindustrie, as given in Table 43 for the single season 1912–13, from which certain general conclusions can be drawn.

TABLE 43.—*Sugar beets and beet sugar: Production in the districts which composed the former German Empire, 1912–13* [1]

District	Area (excluding area for sugar-beet seed)	Sugar beets worked	Sugar production in terms of raw sugar [2]	Factories
	Acres	*Short tons*	*Short tons*	*Number*
Germany, 1923 boundaries	1,074,979	14,679,155	2,340,268	
Areas ceded:				
From East and West Prussia	95,121	1,229,465	181,176	[3] 10
From Posen	171,035	2,269,597	361,951	[3] 19
From Alsace-Lorraine	12,046	166,521	18,169	[3] 1
Total former German Empire	1,353,181	18,344,738	2,901,564	
Sugar made from molasses			81,620	
Total			2,983,184	

Statistics supplied by Die Deutsche Zuckerindustrie.

[1] Sept. 1 to Aug. 31.

[2] Relation of raw to refined sugar is 10 to 9. (Excludes sugar made from molasses in independent factories.)

[3] Number in 1918–19.

During the season 1912–13 the territories ceded on the east to Poland, Danzig, Memel, and Czechoslovakia planted 266,156 acres of sugar beets. About 29 factories located within these territories worked up 3,499,062 short tons of beets, producing 543,127 short tons of raw sugar. Based upon the census of 1910 and the average per capita disappearance of sugar in the German Empire (1909–10 to 1913–14) of 45 pounds, there would have been available to the 4,372,762 inhabitants of all of the eastern ceded districts for human consumption and industrial uses about 98,387 tons of the 1912–13 sugar crop. This figure is probably high, since the peasants of Poland and Silesia undoubtedly consumed less sugar than the average for the Empire, but the exportable surplus produced in these eastern ceded territories was approximately 444,740 tons of raw sugar.

Only one beet-sugar factory was located in the western territories—in Alsace-Lorraine. In 1912–13 this factory worked up 166,521 short tons of beets, producing 18,169 short tons of sugar. In 1910 there

[11] This average export during the sugar years Sept. 1, 1909, to Aug. 31, 1914, should be compared with 931,234 short tons reported by the office of statistics as the average annual net export during the period July 1, 1909, to June 30, 1914.

were 2,753,423 inhabitants in the Saar district and in these western ceded territories—Alsace-Lorraine, the Eupen-Malmedy district ceded to Belgium, and northern Schleswig-Holstein ceded to Denmark. Again employing 45 pounds per capita, the sugar requirements of the western ceded districts amounted to at least 61,952 short tons or 43,783 short tons more than were produced by the Alsace-Lorraine factory. To cover this deficit Germany shipped sugar from the interior to the west and north so that the ceding of these territories would result in normal years in a potential net gain to the exportable surplus of the central districts of at least 43,783 tons. The ceding of the eastern territories meant a potential loss of 444,740 short tons to the exportable surplus of the nation. The difference between the potential gains on the west and the potential losses on the east gives a grand total net loss of about 400,957 tons. This loss to Germany's exportable surplus is, roughly, 42.1 per cent of the average net exports during the period 1909–10 to 1913–14. (Table 41.)

According to the data in Table 43, based upon the single season 1912–13, the cessions of territory following the Versailles treaty resulted in a loss of about 20 per cent of the nation's sugar-beet area, about the same percentage of its potential sugar production, and approximately 42.1 per cent (probably 50 per cent) of its exportable surplus.

TABLE 44.—*Sugar: Approximate balance of the German Empire compared with that of the territory within the present boundaries of the Republic, 1912–13* [1]

Description	Empire of Germany	Ceded districts and the Saar	Germany, 1923 boundaries
		Acres	*Acres*
Acreage planted [2]		278,202	1,074,979
	Short tons	*Short tons*	*Short tons*
Sugar beets worked [2]		3,665,583	14,679,155
Sugar, in terms of raw sugar:			
Visible supply Sept. 1, 1912 [3]	163,064	32,613	130,451
Production at beet sugar factories [2]	2,901,564	561,296	2,340,268
Production at refineries and from molasses [2]	81,620		81,620
Imports [4]	2,803	2,803	
Deficit of western "ceded territories" probably supplied by the central districts [5]		40,980	
Total supply from all sources	3,149,051	637,692	2,552,339
Gross exports refined and raw sugar [6]	[4] 1,166,478	400,957	765,521
Visible supply Aug. 31, 1913 [3]	263,169	52,624	210,545
Unaccounted for	144,616	23,772	120,844
Deficit of western "ceded territories" probably supplied by the central districts [5]			40,980
Total	1,574,263	477,353	1,137,890
Disappearance during year	[4] 1,574,788	160,339	1,414,449

[1] Sept. 1, 1912 to Aug. 31, 1913.
[2] Statistics supplied by Deutsche Zuckerindustrie Association. (See Table 43.)
[3] Visible supply in "ceded territories" estimated to be 20 per cent of total for Empire. Deutsche Zuckerindustrie, vol. 38, No. 42, Oct. 17, 1913, p. 927.
[4] Deutsche Zuckerindustrie, vol. 48, No. 6, Feb. 9, 1923, p. 76.
[5] The deficit of the western "ceded districts" was supplied by a quantity equal to total imports plus shipments from territories now comprising the Republic of Germany.
Domestic disappearance included sugar consumed as human food, employed in industries, and held in storage elsewhere than at factories or official warehouses.
[6] The export from the "ceded districts" is approximated at the net surplus (see above).

POSTWAR BEET-SUGAR SITUATION

Immediately following the war there was a great reduction in the area planted to sugar beets in the territories composing the Republic. Employing the area, factory run, and sugar production, given in Table 43, as a base, the season 1919–20 shows a drop in acreage of 40.7 per cent and a drop in sugar production of 66.5 per cent. The season 1920–21 shows a slight improvement, with the acreage 37.3 per cent and sugar production 48.8 per cent below pre-war (1912–13). During 1919–20 the German Republic imported (net) 103,363 short tons, bringing the per capita supply up to 33.8 pounds, which was 75 per cent of the pre-war average. (See Table 47.) During the next season a net import of 63,860 short tons brought the per capita supply up to 92.4 per cent of normal.

During the past four years there has been a marked recovery in the area planted to sugar beets, as brought out in Table 45.

TABLE 45.—*Sugar beets and beet sugar: Production in Germany, 1923 boundaries, 1919–20 to 1924–25, compared with 1912–13*

Year beginning September 1	Acreage [1]		Beets worked		Factories	Sugar produced (in terms of raw)			
						At beet-sugar factories		From molasses and at refineries	Total
	Total	Percentage of 1912–13	Total	Percentage of 1912–13		Total	Percentage of 1912–13		
	Acres		*Short tons*		*No.*	*Short tons*		*Short tons*	*Short tons*
1912	1,074,979	100.0	14,679,155	100.0	302	2,340,268	100.0	[2] 81,620	2,421,888
1919	637,540	59.3	5,286,904	36.0	260	783,123	33.5	2,343	785,466
1920	674,200	62.7	7,223,917	49.2	262	1,198,042	51.2	9,007	1,207,049
1921	821,439	76.4	8,296,621	56.5	263	1,415,606	60.5	18,136	1,433,742
1922	880,902	81.9	10,258,466	69.9	263	1,595,503	68.2	8,430	1,603,933
1923	829,371	77.2	8,087,130	55.1	264	1,240,038	53.0	24,181	1,264,219
1924	[3] 875,648	81.5	[3] 10,713,888	73.0	.....	[3] 1,700,733	72.7	.....	.....

Statistics furnished by Die Deutsche Zuckerindustrie, quoting German Sugar Organization, revised to conform with latest figures carried by the official publications of the organization.

[1] Excludes acreage for sugar-beet seed.

[2] Quantity made in the total Empire.

[3] Estimated.

ACCUMULATION OF SUGAR STOCKS IN GERMANY

During the season 1921–22, although the sugar-beet area within the Republic of Germany increased to 76.4 per cent of pre-war (1912–13), the season was not favorable. Two hundred and sixty-three factories produced only 60.5 per cent of the pre-war normal (1912–13), to which should be added 18,136 tons of sugar produced at refineries or made from molasses, giving a total of 1,433,742 short tons produced. Referring to Table 41 on "Supply and disappearance of sugar in Germany," it will be noted that this is nearly the quantity of sugar that was on the average available for the domestic use of the whole Empire during the five-year period 1909–10 to 1913–14. During the pre-war period the average per capita supply of sugar within the Empire was 45 pounds. In 1921–22 the production within the Republic itself was 46.4 pounds for a population of 61,755,000 that was probably consuming sugar at a rate below pre-war. On top of this surplus production, the German Republic imported (net) 179,664 tons, bringing the per capita supply up to 52.3 pounds.

This accumulation of stocks continued during the next season, 1922–23. The total production within the Republic was 1,603,933 short tons (see Table 47), or 51.5 pounds per capita. In spite of this surplus production, Germany imported 114,618 short tons. During this season 12,125 short tons were sent to Italy on reparations account and approximately 55,115 short tons were confiscated by the French from factories in the occupied districts and 19,478 short tons were exported. There was during this sugar year a supply of 1,517,691 short tons, or 48.7 pounds per capita, available for domestic use (population 1923 estimated at 62,275,000). There is a discrepancy in German official sugar figures (see footnote 16 on Table 48), and during this season 84,006 short tons are dropped from the records.

Only one conclusion can be drawn: Faced with conditions of a wildly fluctuating currency and precarious banking facilities, the Germans invested in sugar as a safe means of accumulating wealth, awaiting a stabilization of the currency to realize on their investments.

TABLE 46.—*Sugar, raw and refined, in terms of raw: Foreign trade* [1] *of Germany, 1921–22 to 1923–24*

Country	Years beginning July 1		
	1921	1922	1923
	Short tons	*Short tons*	*Short tons*
United States	+27,653	+67,093	(2)
Netherlands	+27,639	+31,111	−46,445
Czechoslovakia	+17,109	+3,808	(2)
Belgium	+4,653	+1,358	(2)
Sweden	+4,290	+20	(2)
Danzig	+4,066	+5,627	(2)
Dutch Indies	+3,617	+28,094	+2,891
Brazil	+3,454	+7,034	(2)
Great Britain	+3,135	+2,051	(2)
Cuba	+2,387	+18,511	(2)
Dominican Republic	+1,654	+798	(2)
Poland	+741	+19,926	(2)
Denmark	+718	+6,771	(2)
Saar district	−10,742	−8,907	−8,269
Other countries	+5,568	+19,855	−104,951
Total	+95,942	+203,150	−156,774

Germany, Statistisches Reichsamt, Montaliche Nachweise über den Auswärtigen Handel Deutschlands.

NOTE.—Refined sugar converted to raw sugar at the ratio of 9:10.

[1] Net imports are indicated by (+) and net exports by (−).

[2] If any, included in other countries.

UNLOADING ACCUMULATED STOCKS

With the stabilization of the currency in the fall of 1923 came the opportunity to realize cash for accumulated sugar. The season of 1923–24 was not specially favorable to the sugar industry, being 77.2 per cent of normal (1912–13) as regards acreage, 53 per cent as regards factory run, while the total production of beet sugar was 52.2 per cent of that of 1912–13. The supply produced in 1923–24 amounted to 40.2 pounds per capita (1924 population, 62,825,000) or 4.8 pounds per capita below pre-war average normal. In spite of this shortage in production, the sugar industry exported 257,028 net tons of sugar during the 1923–24 season.

TABLE 47.—*Sugar, in terms of raw sugar: Supply and disappearance in Germany, 1919–20 to 1923–24, as compared with 1912–13*

Year beginning Sept. 1	Boundaries of 1923				
	Sugar produced [1]	Imports	Exports	Disappearance [1]	
				Total	Per capita
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Pounds*
1912	2,421,888		765,521	1,444,449	48.9
1919	785,466	108,789	5,426	1,020,331	33.8
1920	1,207,049	74,280	10,420	1,271,247	41.6
1921	1,433,742	198,607	18,943	1,542,503	50.0
1922	1,603,933	114,618	31,603	1,517,691	48.7
1923	1,264,219	32,428	289,456	972,193	31.0
Average 1919–1923	1,258,882	105,744	71,170	1,264,793	41.0

[1] Based on data in Table 48.

PROSPECTS FOR 1924–25

The details of the post-war supply and distribution of sugar in Germany (see Table 47) show that in 1919–20 the actual disappearance of sugar was 33.8 pounds per capita, the season ending August 31, with a visible supply of about 104,000 short tons. The following season closed with a total visible supply of 69,000 short tons, and it is probable that the disappearance of 1,271,247 short tons, or 41.6 pounds per capita, between September 1, 1920, and August 31, 1921, represented actual consumption. The average disappearance 41 pounds per capita (Table 47) during the five-year post-war period tends to confirm this probability.

During the next two years the indicated disappearance of 50 and 48.7 pounds per capita, respectively, is probably due to private hoarding of sugar rather than to actual increase in consumption. This is confirmed by the fact that although the sugar production of 1923–24 was 340,000 short tons below 1922–23, still Germany exported 289,000 short tons, and the visible supply that was carried over into the season of 1924–25 was reported at 177,000 short tons. This is the largest officially reported carry over since the war.

The estimated probable production for the season 1924–25 is preliminarily placed at 3,401,466,000 pounds, or 54.1 pounds per capita (1924 population 62,825,000). During the season 1924–25 Germany should have an exportable surplus, which is roughly approximated in the last column of Table 48.

TABLE 48.—*Sugar, in terms of raw sugar: Supply and distribution in Germany, 1919–20 to 1924–25, as compared with 1912–13*

Description	Boundaries of 1923						
	1912–13 (estimated)[1]	1919–20	1920–21	1921–22	1922–23	1923–24	1924–25 (estimated)
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Visible supply on Sept. 1	130,451	[2] 237,895	104,082	69,448	107,230	173,659	177,000
Production at beet-sugar factories	2,340,268	[3] 783,123	[3] 1,198,042	[4] 1,415,606	[5] 1,595,503	[5] 1,240,038	1,700,000
Production at refineries and molasses works	81,620	[3] 2,343	[6] 9,007	[4] 18,136	[7] 8,430	[7] 24,181	
Gross imports refined and raw sugar		[8] 108,789	[9] 74,281	[9] 198,607	[9] 114,618	[9] 32,428	
Total supply from all sources	2,552,339	1,132,150	1,385,412	1,701,797	1,825,781	1,470,306	
Gross exports refined and raw sugar	806,501	[8] 5,426	[9] 10,420	[9] 18,943	[10] 31,603	[9] 289,456	[11] 200,000
Domestic raw sugar on hand at refineries on Aug. 31		[3] 11,653	[3] 12,310				
Raw sugar imports delivered at refineries			[9] 15,485	[9] 25,916	[9] 49,460	[9] 25,515	
Officially reported visible supply on Aug. 31:							
Domestic production [1]	210,545	[2] 78,431	[12] 69,406	[12] 106,089	[12] 173,659	[13] 176,853	[11] 177,000
Imported, refined [2]		[5] 12,908	[12] 42	[12] 924			
Imported, raw [3]		[5] 1,720		217			
Unaccounted for	120,844						
Confiscated from the French from factories in occupied territory					[14] 55,000		
Disbursed during year or on hand Aug. 31	1,137,890	110,138	107,663	152,089	309,722	491,824	[11] 377,000
Calculated disappearance during year	1,414,449	1,022,012	1,277,749	1,549,708	1,516,059	978,482	[11] 1,500,000
Domestic consumption as reported by the Deutsche Zuckerindustrie (see Table 47)		[3] 1,020,331	[3] 1,271,247	[15] 1,542,503	[16] 1,517,691	[13] 972,193	

[1] Based on estimates supplied by Die Deutsche Zuckerindustrie. (See Table 44.)
[2] Deutche Zuckerindustrie, vol. 46, No. 43, Oct. 28, 1921, p. 594.
[3] Deutche Zuckerindustrie, Oct. 28, 1921, Wöchentlicher Marktbericht, No. 43, p. 131.
[4] Deutsche Zuckerindustrie, Oct. 20, 1923, Wöchentlicher Marktbericht, No. 42, p. 101.
[5] Deutsche Zuckerindustrie, vol. 49, No. 41, Oct. 11, 1924, p. 1211.
[6] Estimated to balance total sugar production given in Deutsche Zuckerindustrie, vol. 47, No. 42, Oct. 20, 1922, p. 696.
[7] Deutsche Zuckerindustrie, vol. 49, No. 41, Oct. 11, 1924, p. 1211.
[8] Deutsche Zuckerindustrie, vol. 48, No. 6, Feb. 9, 1923, p. 76.
[9] Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.
[10] Deutsche Zuckerindustrie, vol. 48, No. 42, Oct. 20, 1923, p. 607. Includes 12,125 short tons sent to Italy on reparations account.
[11] Roughly approximate forecast.
[12] Deutsche Zuckerindustrie, Oct. 27, 1922, Wöchentlicher Marktbericht, No. 43, p. 116.
[13] Deutsche Zuckerindustrie, vol. 49, No. 41, Oct. 11, 1924, p. 1199.
[14] Estimate prepared for U. S. Department of Agriculture by the German Sugar Industry, Nov. 28, 1923.
[15] Deutsche Zuckerindustrie, vol. 48, No. 42, Oct. 20, 1923, p. 607. The visible supply at the end of the season 1921–22 is reported to be 66,598 short tons, while the visible supply employed at the beginning of the season 1922–23 is 106,089 short tons, a difference of 39,491 tons. The seasonal disappearance of 1,581,994 short tons given on p. 76 of Deutsche Zuckerindustrie, Feb. 9, 1923, is based upon the former incorrectly reported visible supply. Correcting the seasonal disappearance by subtracting 39,491 short tons, gives 1,542,503 short tons.
[16] Deutsche Zuckerindustrie, vol. 49, No. 41, Oct. 11, 1924, p. 1199. The German sugar industry gives two figures for the visible supply on Aug. 31, 1923—first, the calculated supply of 257,665; second, the officially reported supply of 173,659. This gives a difference of 84,006 short tons. The reported disappearance of domestic sugar is placed at 1,433,685 short tons. Adding to this the above difference gives a total disappearance of 1,517,691 tons.

Even assuming that the present sugar consumption in the Republic of Germany is as high as it was before the war, and without including the amount (not at present known) of the sugar manufactured from molasses, Germany should have an exportable surplus during the season 1924–25 of at least 250,000 short tons of raw sugar. Undoubtedly there are still within the country considerable invisible stocks carried over from last season, so that the available sugar supplies probably considerably exceed the reported amount.

FODDER BEETS

Statistics relative to fodder beets do not occur in the "Vierteljahrshefte," giving the statistical status of Germany. The production statistics for fodder beets in Alsace-Lorraine for the years just before the war are also lacking, but a two-year average of the years 1912 and 1913 for fodder beets in Prussia is available and indicates that in the districts ceded to surrounding countries from Prussia, as shown in Table 49, about 94,000 acres were planted to fodder beets.

TABLE 49.—*Fodder beets: Average production and acreage in the districts which composed former Prussia, average, 1912–13*

District	Area	Production
	Acres	*Short tons*
Present Prussia (excluding Saar)	537,452	10,467,827
Saar in Prussia	2,632	44,434
Areas ceded:		
From East Prussia—		
To Memel	2,609	44,065
To Poland	190	2,767
From West Prussia—		
To Danzig Free State	4,801	111,828
To Poland	21,965	384,405
From Posen to Poland	30,549	586,809
From Upper Silesia:		
To Poland	3,635	64,264
To Czechoslovakia	358	6,603
From Lower Silesia to Poland	731	13,889
From Schleswig-Holstein to Denmark	28,451	343,400
From Rhine Province to Belgium	230	4,299
Total territories ceded from Prussia	93,519	1,562,929
Total Prussia	633,603	12,075,190
Per cent in territories ceded and in Saar	15.2	13.3

Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft, 1909–1913 (Preussische Statistik, Nos. 221, 225, 230, 235, 240), supplemented by figures on the lost areas prepared in the Königliches Preussisches Statistisches Landesamt.

From Table 49 it is seen that before the war the Prussian districts now comprised within the Republic of Germany planted yearly about 537,000 acres to fodder beets. In 1921 (see Table 50) we find in Prussia alone 937,000 acres under fodder beets, or an increase of 74.5 per cent. Since only small quantities of fodder beets enter into commerce or are used industrially, the crop being almost entirely fed on the farms upon which grown, this increased acreage can only indicate an increased tendency toward bringing animal production up to normal.

Although no pre-war figures are available for a comparison between fodder-beet acreage of the Republic and the acreage of the same territories under the Empire, it is probable that the present fodder-beet area of the Republic of about 2,000,000 acres is greatly in excess of that formerly planted to this crop.

It is expected that in the near future Germany will tend to bring animal production up to its normal pre-war status, producing domestically, as far as possible, the requisite feedstuff supplies. This tendency to produce larger supplies of home-grown feedstuffs is shown not only by the larger area devoted to fodder beets but to a more marked degree by the hay situation, a discussion of which follows.

TABLE 50.—*Fodder beets: Area and production on present Prussia and the German Republic, 1921–24, as compared with 1912–13*

[In thousands—000 omitted]

Year	Prussia		German Republic	
	Area	Production	Area	Production
	Acres	*Short tons*	*Acres*	*Short tons*
Average, 1912–13	537	10,468	(1)	(1)
1921	937	11,023	1,803	19,645
1922	993	15,552	1,939	27,284
1923	927	13,644	1,869	24,242
1924			1,809	25,626

1909–1913: Supplemented by figures on the ceded areas prepared in the Königlich Preussiches Statistisches Landesamt.
1921: Germany, Statistisches Reichsamt, Vierteljahrshefte zur Statistik des Deutschen Reichs.
1922–1924: Germany, Statistisches Reichsamt.

[1] No statistics available.

HAY

During the pre-war period 1909–1913 there was on the average in the German Empire 20,152,151 acres under clover, alfalfa, and in meadows of all classes that produced annually an average of 40,033,479 short tons of hay. In 1913 there were 4,558,000 horses, 20,994,000 cattle, 5,521,000 sheep, and 3,548,000 goats. Approximating the hay consumption of goats and sheep at one-seventh that of a mature large animal, we can estimate the hay supply available for large livestock in the Empire at about 2,983 pounds per head.

In the ceded districts and the Saar territory there were during this period 2,366,026 acres under hay crops that produced on the average 4,676,758 short tons of hay annually. This was 11.74 per cent of the acreage and 11.68 per cent of the production of the lands devoted to hay crops in the whole Empire.

The pasture and hay rations for the livestock, except swine, calculated to a large-animal basis, were but slightly better (3,016 pounds per head) in the territories now composing the Republic of Germany than on the average in the Empire as a whole.

The general details of the pre-war hay area and production in the ceded districts and in the territory now constituting the Republic of Germany appear in Table 51.

TABLE 51.—*Hay: Average production in the districts which composed the former German Empire, 1909–1913*

District	Clover		Alfalfa		Irrigated and drained meadows		Other meadows	
	Acres	*Short tons*	*Acres*	*Short tons*	*Acres*	*Short tons*	*Acres*	*Short tons*
Germany, 1923 boundaries	4,199,848	9,056,808	512,253	1,353,953	1,062,261	2,381,021	12,011,763	22,564,939
Saar district:								
Rhine Province	11,661	23,504	4,707	10,110	1,292	3,070	43,166	85,942
Bavaria [1]	870	1,367	813	5,010			[2] 3,689	[2] 4,112
Areas ceded:								
From East Prussia—								
To Memel	41,545	93,359	35	66	1,391	2,607	87,602	164,279
To Poland	3,813	5,862	10	17	324	685	10,250	13,689
From West Prussia—								
To Danzig Free State	30,581	68,044	526	1,509	2,745	6,913	53,243	112,784
To Poland	181,848	345,649	5,557	13,858	5,293	12,635	228,459	433,746
From Posen to Poland	225,172	401,503	13,005	30,451	9,116	22,712	479,401	831,581
From Upper Silesia—								
To Poland	24,888	51,655	205	442	1,960	4,588	61,478	90,235
To Czechoslovakia	4,314	8,731	20	40	47	115	4,870	7,507
From Lower Silesia to Poland	3,637	6,636	42	87	541	1,198	12,703	18,070
From Schleswig-Holstein to Denmark	36,170	81,244	482	1,283	3,200	6,258	99,769	142,786
From Rhine Province to Belgium	2,916	6,155			1,769	3,826	21,821	55,172
Alsace-Lorraine to France	100,426	233,853	67,824	182,445	130,311	344,797	340,519	734,571
Total ceded districts	655,310	1,302,691	87,706	230,198	156,097	406,334	1,400,115	2,604,420
Total Empire	4,867,689	10,384,370	605,479	1,599,271	1,220,250	2,790,425	13,458,733	25,259,413
Per cent for ceded districts and Saar	13.7	12.8	15.4	15.3	12.9	14.7	10.8	10.7

Total Germany and Alsace-Lorraine: Germany, Kaiserliches Statistisches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, 1910, 1911, 1912, 1913, and 1914, Heft 1. Lost territories in Prussia: Prussia, Königliches Statistisches Landesamt, Statistik der Landwirtschaft in Preussischen Staate, 1909, 1910, 1911, 1912, and 1913, and tables for divided regions compiled in the Preussisches Staatliches Landesamt. Bavarian Saar: Zeitschrift des Bayerischen Statistischen Landesamt, 1922, Nos. 3 and 4, p. 438. Bavaria: Statistisches Landesamt.

[1] One year only, 1914.

[2] Includes irrigated and drained meadows.

POST-WAR HAY SITUATION IN THE REPUBLIC OF GERMANY

Since the war the areas under forage crops in the Republic have been considerably increased, with the exception of irrigated and drained meadows, which show a falling off of 25.3 per cent. The average clover acreage of the Republic has increased 10.4 per cent; alfalfa, 30.9 per cent; and meadows, other than irrigated and drained, 5.5 per cent. The total area of grass and hay lands, including irrigated and drained meadows, shows an increase of 5.5 per cent.

The acreage has increased from 17,786,000 in 1909–1913, to 18,773,000 in 1924, while hay production has increased from 35,357,000 short tons to 37,018,000 short tons in 1924. The hay ration, on a basis of large animals, has been increased from the pre-war average of 3,016 pounds to 3,272 pounds per head in 1924.

Enough hay was produced in Germany in 1924 to feed the pre-war ration to 2,000,000 more head of cattle than were reported on December 1. Livestock in Germany are, however, being fed more roughage and less concentrated feedstuffs than before the war and, probably, in view of the decreased quantities of straw from cereals available, the stocks of hay now on hand are sufficient only to carry the present numbers of livestock through the winter.

TABLE 52.—*Hay: Area and production in Germany, 1921–24, as compared with 1909–1913 average*

[In thousands—000 omitted]

Kind of hay	Boundaries of 1923									
	Average 1909–1913		1921		1922		1923		1924	
	Acres	*Short tons*	*Acres*	*Short tons*	*Acres*	*Short tons*	*Acres*	*Short tons*	*Acres*	*Short tons*
Clover	4,200	9,057	4,944	7,865	4,676	7,745	4,818	10,569	4,635	9,768
Alfalfa	512	1,354	622	1,205	662	1,639	686	1,740	670	1,832
Irrigated and drained meadows	1,062	2,381	805	1,386	784	1,510	764	1,624	793	1,687
Other meadows	12,012	22,565	12,657	17,543	12,712	19,698	12,693	24,120	12,675	23,531
Total	17,786	35,357	19,028	28,059	18,834	30,592	18,961	38,053	18,773	37,018

1909–1913: Germany, Kaiserliches Statistiches Amt, Vierteljahrshefte zur Statistik des Deutschen Reichs, heft. I, 1910, 1911, 1912, 1913, and 1914.
1921: Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Vierteljahrshefte zur Statistik des Deutschen Reichs, heft. I, 1922.
1922–1924: Germany, Statistisches Reichsamt, Jan. 5, 1925.

LIVESTOCK INDUSTRY

The expansion of the livestock industry in Germany is restricted by the area of pasturage available, the quantity of forage that can be produced, and the degree to which concentrated feedstuffs can be imported and fed at a profit. The development of the livestock industry involves the problem of the degree to which it is of greater economic importance to Germany to produce its meat, butter, milk, lard, bacon, and other animal products than to import them.

PRE-WAR LIVESTOCK SITUATION

During the years just preceding the war it had been possible to produce about 85.5 per cent of meats and nonvegetable fats (except butter) and about 88 per cent of the butter that were required to feed the population of the Empire. The available pasture lands of the northwest provinces—lands not well fitted for the profitable production of cereals or sugar beets but producing grass in sufficient quantities to render grazing and hay production profitable—were about fully stocked. In other parts of the country the competition between field crop production and livestock production had about reached a balance based upon the margin of profit per acre.

The 30-year period just preceding the war (1883–1913) that marked the rapid expansion of Germany's industries, with a concentration of population in urban centers and in industrial districts, also marked a rapid expansion in the numbers of all classes of livestock except sheep (Fig. 7); but, the increase in the total numbers of livestock did not keep pace with the increase in population, as shown in Table 53.

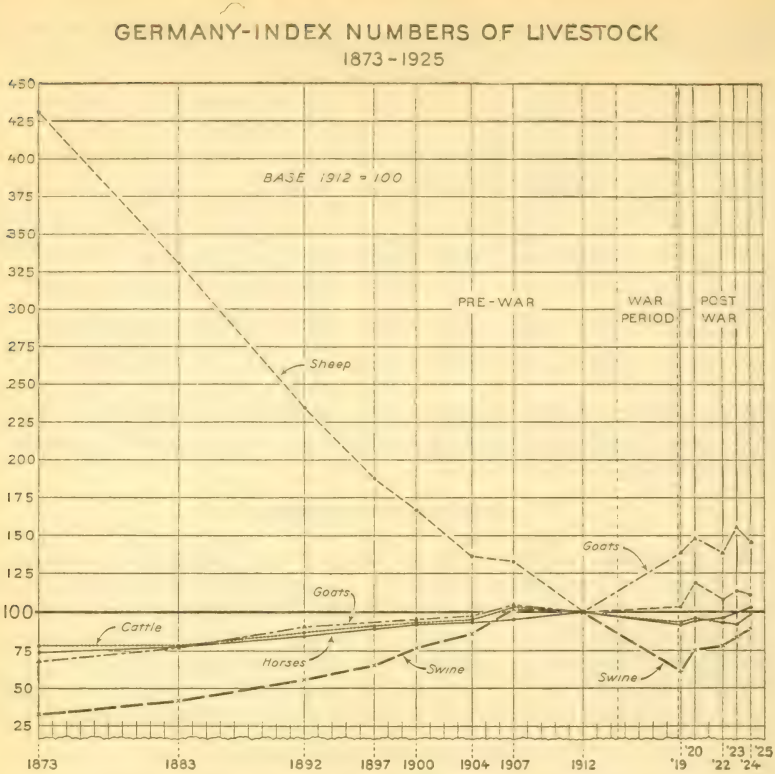

FIG. 7.—Index numbers of livestock in Germany from 1875 to 1925 compared with 1912 as 100

In each case the pre-war data are compared with the basic data for the whole of the German Empire, while post-war numbers are compared with 1912 data calculated on a basis of the areas within the boundaries of the German Republic as of 1923. The outstanding features of this graph are the pre-war decrease in sheep and increase in swine. Since the war the numbers of sheep, goats, and horses have increased beyond the 1912 numbers. Swine and cattle are rapidly recovering their pre-war status. (See text.)

TABLE 53.—*Livestock: Number in Germany, 1883 and 1913*

Classification of animals	1883		1913	
	Number	Per thousand inhabitants	Number	Per thousand inhabitants
	Thousands	*Number*	*Thousands*	*Number*
Horses	3,523	78	4,558	70
Cattle (beef and draft)	6,700	148	9,674	149
Cows	9,087	201	11,320	174
Sheep	19,190	424	5,521	85
Goats	2,641	58	3,548	55
Swine	9,206	204	25,659	395
Total	50,347	1,113	60,280	928
Population	45,222		[1] 64,926	

[1] Population as of Dec. 1, 1910.

The economic factors (more particularly the increasing importations of Australian and Russian wool) that are associated with the falling off in the numbers of sheep held on German farms are discussed in detail elsewhere. (See "Sheep," p. 98.) The increase in beef and draft cattle was more rapid than that in dairy stock, the former class keeping pace with the increase in population while dairy cattle fell off 27 head per 1,000 inhabitants, indicating that the economic limit of the numbers of dairy cows that could be profitably maintained on the available lowlands of the northwestern provinces had been approached. The great increase in swine was due to the necessity of meeting, as nearly as possible, the growing requirements of pork and pork products of the industrial centers. This was possible because the native German breeds of swine were of very low grade compared with English breeds and feeding methods on German farms were also very primitive. The native semiwild breeds that ranged the woods summer and winter were replaced by rapid-maturing English breeds that could be stall-fed with great profit. Pork products became in a sense by-products of the dairy and potato industries.

EFFECT OF VERSAILLES TREATY ON LIVESTOCK SITUATION

The detailed effect of the changes of territory upon the livestock industry as affecting each class of animals is discussed separately under the swine, cattle, horse, and sheep situations later in this bulletin, but Table 54 is here given to indicate the extent of these territorial changes upon the industry as a whole. In general 16.5 per cent of the horses, 12 per cent of the cattle, 12.2 per cent of the swine, 9.7 per cent of the sheep, 10.8 per cent of the goats, and 12.5 per cent of the fowls of the former German Empire were found in the ceded territories and the Saar. Though the number of live animals per 1,000 inhabitants, with the exception of sheep and goats, was somewhat greater in the ceded districts than in the Empire as a whole, the differences between the numbers in the Empire and within the boundaries of the present Republic were not great: horses, 70 against 66; cattle, 323 against 320; swine, 395 against 390; sheep, 85 against 86; goats, 55 against 55; and fowls, 1,266 against 1,244. Total livestock (except fowls) numbered 928 per 1,000 inhabitants in the Empire as against 917 in the territories now composing the Republic—a difference of 11 animals, or 1.19 per cent. This difference is relatively so insignificant that the present livestock situation in Germany can not be considered to have been materially affected by the changes in territory brought about by the provisions of the Versailles treaty.

TABLE 54.—*Livestock: Classification and number in the districts which composed the former German Empire, 1913*

District	Cattle		Horses		Swine		Sheep		Goats		Fowls	
	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants
	Thousands	*Number*	*Thousands*	*Number*	*Thousands*	*Number*	*Thousands*	*Number*	*Thousands*	*Number*	*Thousands*	*Number*
Germany, 1923 boundaries	18,476	320	3,807	66	22,533	390	4,988	86	3,164	55	71,913	1,244
Saar district:												
Rhine Province	58	101	17	28	88	154	2	3	50	87	330	577
Bavaria	16	198	3	37	18	222	1	12	10	124	71	877
Areas ceded:												
From East Prussia—												
To Memel	76	538	34	241	138	977	14	99	3	21	328	1,976
To Poland	16	645	6	242	21	847	5	202	1	40		
From West Prussia—												
To Danzig Free State	77	233	41	124	92	278	7	21	17	51	2,108	1,627
To Poland	421	436	155	161	648	672	204	211	52	54		
From Posen to Poland	867	445	283	145	1,223	628	231	119	131	67	3,426	1,760
From Upper Silesia—												
To Poland	96	107	28	32	134	150	1	1	33	37	568	605
To Czechoslovakia	15	330	3	66	13	286	0	.....	6	132		
From Lower Silesia to Poland	16	610	4	152	17	648	5	190	2	76	50	1,905
From Schleswig-Holstein to Denmark	255	1,533	38	228	218	1,311	18	108	3	18	378	2,272
From Rhine Province to Belgium	54	900	2	33	23	383	1	17	1	17	111	1,850
Alsace - Lorraine to France	551	294	[1] 137	[1] 73	493	263	44	23	75	40	2,881	1,537
Total for ceded districts	2,444	378	731	113	3,020	467	530	82	324	50	9,850	1,522
Total Empire	20,994	323	4,558	70	25,659	395	5,521	85	3,548	55	82,164	[2] 1,266
Per cent in ceded districts and Saar	12.0	.....	16.5	.....	12.2	.....	9.7	.....	10.8	.....	12.5	.....

Prepared in the German Statistisches Reichsamt, Sept. 15, 1923, using as basis for present territory, Verteljahrshefte, 1923, heft. 3; for total areas lost; Statistisches Jahrbuch für das Deutsche Reich. 1921–22; total former Empire, Vierteljahrshefte, 1914, heft 4. Division of lost areas according to country to which lost was obtained from statistics, prepared in the Preussisches Statistisches Landesamt.

[1] Figures for 1912. No figures for 1913 are available.

[2] Figures for poultry are difficult to estimate exactly and are apt to be too low. According to statements of the "Reichsernahrungsamt" this figure should be raised by 25 per cent.

POST-WAR LIVESTOCK SITUATION

Germany's herds of cattle and swine were greatly depleted during the war. Comparing the numbers of head per 1,000 inhabitants within the present boundaries of the Republic with recent years there were 320 head of cattle in 1913 against 264 in 1922 and 275 in 1924, while there were 390 swine in 1913 against 238 in 1922 and 268 in 1924. (See Table 55.)

TABLE 55.—*Livestock: Density in Germany, 1922–1924, as compared with 1913* [1]

Class	Boundaries of 1923							
	1913		1922		1923 [2]		1924	
	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants	Number	Per thousand inhabitants
	Thousands	*Number*	*Thousands*	*Number*	*Thousands*	*Number*	*Thousands*	*Number*
Horses	3,807	66	[3] 3,691	60	[4]		[3] 3,890	62
Cattle, total	18,476	320	16,316	264	16,091	258	17,296	275
(Cows)	(9,973)	(173)	(8,206)	(133)	(8,308)	(133)	[5] (8,796)	(140)
Sheep	4,988	86	5,566	90	5,859	94	5,717	91
Goats	3,164	55	4,140	67	4,654	75	4,351	69
Swine	22,533	390	14,678	238	15,832	254	16,844	268
Total	52,968	917	44,391	719			48,098	765
Drop in number from pre-war			8,577				4,870	
Per cent of drop			16.2				9.2	
Geese			5,392	87			5,938	94
Ducks			1,668	27			2,065	33
Chickens			58,145	942			63,439	1,010
Total poultry	71,913	1,244	65,205	1,056			71,442	1,137
Population	57,800		61,755		62,275		62,825	

1913: See Table 54 for sources.
1922: Germany, Statistisches Reichsamt, Wirtschaft und Statistik, vol. 3, heft 2, Dec. 21, 1923.
1923: Germany, Statistisches Reichsamt, Vierteljahrshefte zur Statistik des Deutschen Reichs, vol. 33, heft 2, 1924.
1924: Deutscher Reichsanzeiger und Preussischer Staatsanzeiger, Feb. 3, 1925.

[1] Census as of Dec. 1.
[2] The livestock figures for 1923 are officially reported as of Oct. 1; however, by subtracting slaughterings for October and November from the 1923 figures, it is possible to get figures which, although not absolutely correct, allow of comparison:

Classification	Oct. 1, 1923	Dec. 1, 1923 (estimated)
	Thousands	*Thousands*
Cattle	16,691	16,091
Swine	17,308	15,832
Sheep	6,105	5,859
Goats	4,675	4,654

[3] Includes 40,289 military horses.
[4] Not available.
[5] From Wirtschaft und Statistik.

There is a general tendency throughout Germany to bring cattle and swine as nearly as possible up to pre-war numbers. The numbers of horses, sheep, and goats in 1924 actually exceeded the numbers that were found in 1913 within the territories now composing the Republic.

The great reduction in area sown to cereals and root crops has resulted in a large acreage returning to grass. As a consequence, sheep raising, stimulated by high wool prices, has greatly increased, especially on the large estates. During the period of monetary inflation and the circulation of an almost worthless mark, there were no better means by which the farmers could accumulate real wealth than by increasing the number of live animals on the farms. On the large estates of Pomerania and central Germany and on the larger farms of the northwest flocks have so increased during recent years that in 1922

the average density for the Republic was 90, in 1923 the density was 94, and in 1924 it was 91 per 1,000 inhabitants, against 86 in 1913.

Horse and sheep production have been industries more or less fostered by large estates and by the upper classes of European nations generally; among the poorer peasants, the tendency has been to produce a larger proportion of cattle and swine. It is noteworthy that during the war period horse breeding suffered relatively little in Germany. The enumeration of 1922 shows that in spite of the great depletion of the war there were only 116,000 fewer horses in the area of the Republic than in 1913, a decrease of only 3 per cent. During and after the war period breeding was maintained at a nearly normal rate, so that, in 1924 (excluding about 40,000 military horses) there were 43,000 more horses in the territories of the Republic of Germany than in 1913.

Goats are the milk animals of the very poor. Able to live and produce milk under conditions ruinous to the higher-bred dairy cow, goats are a boon to the needy, especially those living in small towns and on the outskirts of cities. It is not surprising that under the stress of adverse conditions in Germany during the past few years goats have increased in numbers.

The numbers of fowls kept on farms are subject to great fluctuation, depending upon market possibilities. It is probable that during the war the stocks of fowls on German farms were greatly depleted. In 1922 there were nearly 7,000,000 fewer fowls than were found in 1913 within the territories now composing the Republic. In 1924 the flocks of geese, ducks, and chickens had so increased that their number was only 471,000 below pre-war.

As a matter of national economy Germany will strive as far as possible to produce within the Republic its own meat supplies. Under the stimulus of better prices and a larger purchasing public, following the industrial revival, recovery of the livestock industry to a pre-war status will be rapid.

The actual as well as the per capita reductions of cattle and swine during the period of the war have greatly affected the meat and fat supply of Germany.

Table 56 shows that in 1912 the German Empire produced within its own borders 85.5 per cent of its total meat and nonvegetable fat requirements (except butter), 87.8 per cent of its butter requirement, and 59.2 per cent of its egg requirement. These estimates are for one year only and though only approximate they indicate that Germany was nearly self-supporting as far as meats were concerned. It will be noted that fish was the heaviest item in importations of meat. Deducting fish and fish fats from the totals above shows that the Empire of Germany produced 93.8 per cent of its total requirements of flesh and animal fats.

TABLE 56.—*Animal products: Supply in the former German Empire, 1912*

Class	Domestic slaughterings [1]	Imports less exports	Total supply	Supply per capita [2]
Meats and fats:	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*Pounds*
Beef	2,114,377	83,753	2,590,902	39.9
Veal	392,772			
Horse meat	92,792		92,792	1.4
Pork—				
Unclassified	4,605,310	39,220	4,644,530	71.5
Bacon		4,189	4,189	.1
Ham		243	243	
Total	4,605,310	43,652	4,648,962	71.6
Mutton	147,036	375	147,411	2.3
Goat meat	42,549	22	42,571	.7
Chicken and unclassified fowls	161,763	19,489	181,252	2.8
Geese	103,429	551	103,980	1.6
Ducks	11,486		11,486	.2
Other domestic stock and game	92,593	1,014	93,607	1.4
Fish	380,845	785,830	1,166,675	18.0
Lard	[3]	233,952	233,952	3.6
Other animal fats	[3]	130,270	130,270	2.0
Fish fats	[3]	82,011	82,011	1.2
Total meats and fats	8,144,952	1,380,919	9,525,871	146.7
Butter	881,840	121,981	1,003,821	15.5
	Thousands	*Thousands*	*Thousands*	*Number*
Eggs	4,875,000	[4] 3,366,000	[4] 8,241,000	127
	1,000 gallons		*1,000 gallons*	
Milk	[5] 3,409,378		3,409,378	
		Pounds	*Pounds*	
Milk		68,915,796	68,915,796	
Cream		92,372,740	92,372,740	

Slaughtering: Prepared from official sources under the supervision of the Reichsernaehrungsamt.
Imports and exports: Germany, Kaiserliches Statistisches, Amt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Includes slaughtering or offal fats as well as those ordinarily considered as part of the dressed carcass.
[2] Population, 1910, 64,925,993.
[3] Included in meats.
[4] Includes shell eggs and egg powder reported in weight, but reckoned in number on the basis of a weight per egg of 0.11 pound. (See Monatliche Nachweise über den Auswärtigen Handel Deutschlands, December, 1922.)
[5] Includes milk fed to calves.

EFFECT OF VERSAILLES TREATY ON MEAT SUPPLIES

The relation of the numbers of live animals in the former German Empire to the number slaughtered for food, with data on egg, butter, and milk production, is found in Table 57, which gives estimates for the year 1912. The number of cows in Germany ranged from 10,000,000 to 11,000,000. In view of this fact, the first column of this table indicates that relatively few calves were carried over at the end of the year. Hogs were turned over once a year, sheep once in two years, chickens once a year, and the numbers of geese and ducks slaughtered during the year were twice the number carried over winter. In the domestic production of such a large percentage of the home requirement Germany slaughtered each year just about the equivalent of the natural increase, maintaining from year to year as large a number of live animals as was possible under the economic conditions of the Empire's restricted feedstuff supplies.

TABLE 57.—*Animal products: Obtained from livestock in the former German Empire, 1912*

Classification	Number of livestock Dec. 2, 1912	Livestock slaughtered		Average slaughtering weight per head [1]	Total slaughtering weight	Supply per capita [2]
Meats and fats:	*Thousands*	*Thousands*	*Per cent*	*Pounds*	*1,000 pounds*	*Pounds*
Cattle	18,450	3,703	20.1	571.0	2,114,377	32.6
Calves	1,732	4,454	257.2	88.2	392,772	6.0
Horses	4,523	179	4.0	518.4	92,792	1.4
Hogs	21,924	24,011	109.5	191.8	4,605,310	70.9
Sheep	5,803	2,779	47.9	52.9	147,036	2.3
Goats	3,410	1,206	35.4	35.3	42,549	0.7
Chickens	73,375	73,375	100.0	2.2	161,763	2.5
Geese	6,702	13,404	200.0	7.7	103,429	1.6
Ducks	2,605	5,210	200.0	2.2	11,486	0.2
Other domestic stock and game					92,593	1.4
Fish					380,845	5.9
Total					8,144,952	125.5
Slaughterings or offal fats: [3]						
Cattle		3,703		49.6	183,676	2.8
Calves		4,454		0.9	3,924	0.1
Hogs		24,011		11.0	264,673	4.1
Sheep		2,779		4.4	12,258	0.2
Geese		13,404		1.1	14,771	0.2
Total					479,302	7.4

	Number of livestock, producing poultry, and dairy products	Production		Supply per capita [2]
		Total	Per animal	
Poultry and dairy products:	*Thousands*	*1,000 pounds*		*Pounds*
Butter		881,840		13.6
		Thousands	*Number*	*Number*
Eggs, from hens	65,000	4,875,000	75	75.1
Milk—		*1,000 gallons*	*Gallons*	*Gallons*
From cows	10,205	6,065,607	594.4	93.4
From sheep	3,321	61,288	18.5	1.0
From goats	2,609	241,187	92.4	3.7
Total		6,368,082		98.1
Uses of milk:			*Per cent*	
For butter		2,958,704	46.5	45.6
Human consumption and for calves		3,409,378	53.5	52.5
Total		6,368,082	100.0	

Prepared from official sources under the supervision of the Reichsernaehrungsamt.

[1] Slaughtering or offal fats have been added to the official slaughtering weights.
[2] Population, 1910, 64,925,993.
[3] These figures do not include the fats ordinarily considered as part of the dressed carcass.

As far as home-grown feedstuffs are concerned, the livestock industry of the territories now composing the Republic was but little better situated during 1909–1913 than it was in the Empire as a whole, hay supplies in the former averaging 3,016 pounds per head against 2,983 pounds in the latter. The authorities of the Reichsernaehrungsamt estimate that about the same percentage of locally produced livestock was slaughtered in 1912 within the boundaries of the Republic as in the whole Empire. For this reason the percentages found in column 3 of Table 57 of animal products obtained from livestock in the former German Empire are employed in Table 58 pertaining to the animal products obtained from livestock in the Republic.

All of the animals imported from abroad for meat in 1912 (equivalent to about 117,000,000 pounds of meat) were probably slaughtered within the territories of the Republic. In addition, live animals or meats equivalent to about 70,000,000 pounds were shipped to the interior provinces from the districts that after the war were ceded to surrounding countries.

TABLE 58.—*Animal products: Obtained from livestock in Germany, 1923 boundaries, in 1912*

Classification	Number of livestock Dec. 2, 1912	Livestock slaughtered		Average slaughtering weight per head [1]	Total slaughtering weight	Supply per capita [2]
Meats and fats:	*Thousands*	*Thousands*	*Per cent*	*Pounds*	*1,000 pounds*	*Pounds*
Cattle	15,977	3,211	20.1	571.0	1,833,456	31.7
Calves	1,460	3,755	257.2	88.2	331,131	5.7
Horses	3,822	153	4.0	518.1	79,266	1.4
Hogs	18,877	20,670	109.5	192.0	3,968,159	68.7
Sheep	5,188	2,485	47.9	52.9	131,482	2.3
Goats	2,997	1,061	35.4	35.3	37,423	0.6
Chickens	63,961	63,961	100.0	2.2	141,006	2.4
Geese	5,707	11,414	200.0	7.7	88,074	1.5
Ducks	2,212	4,424	200.0	2.2	9,755	0.2
Other domestic stock and game					80,556	1.4
Fish					380,845	6.6
Total					7,081,153	122.5
Slaughtering or offal fats: [3]						
Cattle		3,211		49.6	159,282	2.8
Calves		3,755		0.9	3,307	0.1
Hogs		20,689		11.0	228,055	3.9
Sheep		2,485		4.4	10,957	0.2
Geese		11,414		1.1	12,588	0.2
Total					414,189	7.2

	Number of livestock, producing poultry, and dairy products	Production		Supply per capita [2]
		Total	Per animal	
Poultry and dairy products:	*Thousands*	*1,000 pounds*		*Pounds*
Butter		771,610		13.3
		Thousands	*Number*	*Number*
Eggs from hens	56,500	4,240,000	75	73.4
Milk:		*1,000 gallons*	*Gallons*	*Gallons*
From cows	8,986	5,341,253	594.4	92.4
From sheep	2,969	54,948	18.5	0.9
From goats	2,293	211,864	92.4	3.7
Total		5,608,065		97.0
Uses of milk:		*1,000 gallons*	*Per cent*	*Gallons*
For butter		2,588,866	46.2	44.8
For human consumption and for calves		3,019,199	53.8	52.2
Total		5,608,065	100.0	97.0

Prepared from original official sources under the supervision of the Reichsernaehrungsamt.

[1] Slaughtering or offal fats have been added to the official slaughtering weights.
[2] Population, 1910, 57,799,808.
[3] These figures do not include the fats ordinarily considered as part of the dressed carcass.

In 1912 the general domestic per captia production of meat and fat supplies in the territories now constituting the Republic was somewhat less than in the Empire as a whole. This was due to a greater density of population in the boundaries of the Republic than in the Empire, rather than to any marked difference in potential meat production between the territories ceded and those that remained to Germany. The decreases in per capita supply of meats and meat products are, approximately, 3 pounds of meat, 0.2 pound fats (except butter), 0.3 pound butter, 1.7 eggs, and 1.1 gallons of milk.

In recent years the Republic of Germany has imported cattle, sheep, and swine from Memel, cattle and swine from Poland and cattle from Danzig, which is probably a continuation of trade relationships between shipping organizations in these districts and buying concerns in the interior that were established under the former Empire. These imports from the eastern ceded districts have exceeded the exports of cattle, sheep, and swine to the Saar district. Taking all factors into consideration, it is probable that in 1912 the per capita meat requirement of the territories now comprised within the Republic of Germany was somewhat greater than the average requirement of the Empire as a whole. The territory of the Republic consumed all of its locally produced meats and about 190,000,000 pounds in addition; the equivalent of the total imports of meat and live animals intended for slaughter into the Empire as a whole plus shipments of meat and live animals from the districts that were ceded to surrounding countries. The effect of the Versailles treaty was to increase somewhat (2 to 3 per cent) the burden of German meat and fat imports.

POSTWAR MEAT AND FAT SITUATION IN GERMANY

In order to compare post-war with pre-war conditions in the Republic of Germany, an approximate numerical expression of the Republic's meat supplies is essential. Lacking data as to the probable shipments of the ceded districts to the interior, the average per capita meat supply of the Empire has been employed in approximating the total meat supplies available in the territory of the Republic in 1912, and the difference between total supply and local production is considered to be the quantity imported. (See Table 59.) This gives an approximate figure with which to compare post-war data.

TABLE 59.—*Meats: Supply in the German Republic, 1921–1924, as compared with the same territory and total Empire for 1912*

Classification of meats	German Empire	Germany (1923 boundaries)	Republic of Germany			
	1912	1912	1921	1922	1923	1924
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Home produced:						
Beef	2,114,377	1,833,456	1,455,047	1,518,672	[1] 932,400	[2] 1,561,167
Veal	392,772	331,131	274,451	281,406	[1] 227,500	[2] 345,376
Pig	4,605,310	3,968,159	2,328,708	2,326,834	[1] 2,022,100	[2] 2,896,869
Mutton	147,036	131,482	131,526	115,047	[1] 71,430	[2] 111,823
Goat	42,549	37,423	43,034	40,917	[3] 21,992	[2] 24,203
Horse	92,792	79,266	78,175	125,927	79,919	[2] 57,087
Chicken	161,763	141,006	116,502	176,368	[4] 128,175	[5] 128,175
Geese	103,429	88,074	84,921	108,025	[4] 83,113	[5] 83,113
Ducks	11,486	9,755	10,417	11,023	[4] 7,407	[5] 7,407
Other domestic stock and game	92,593	80,556	[5] 80,556	[5] 80,556	[5] 80,556	[5] 80,556
Fish	380,845	380,845	362,557	364,773	[5] 364,773	[5] 364,773
Total	8,144,952	7,081,153	4,965,894	5,149,548	4,019,365	5,660,549
Imported (net):			[7]			
Beef and veal	83,753	[6] 144,500	[8] 67,627	112,326	182,648	235,605
Pig	43,652	[6] 167,619	223,695	98,214	142,716	143,947
Mutton	375		[9] 3,371	3,564	2,856	2,444
Goat	22	[6] 5,780				
Chicken	19,489	[6] 23,120	64	[10] −3	123	8,755
Geese	551	[6] 5,780				
Other domestic stock and game	1,014		45	1,431	130	1,207
Fish	785,830	[6] 658,918	698,651	324,848	510,239	668,386
Shellfish			[10] −3,346	[10] −15,200	2,878	29,930
Total (except shellfish)	934,686	1,005,717	993,453	540,380	838,712	1,060,344
Total supply:						
Beef and veal	2,590,902	2,309,087	1,797,125	1,912,404	1,342,548	2,142,148
Pig	4,648,962	4,135,778	2,552,403	2,425,048	2,164,816	3,040,816
Mutton	147,411	131,482	177,931	159,528	96,278	138,470
Goat	42,571	43,203				
Horse	92,792	79,266	78,175	125,927	79,919	57,087
Chicken	181,252	164,126	201,487	284,390	211,411	220,043
Geese	103,980	93,854				
Ducks	11,486	9,755	10,417	11,023	7,407	7,407
Other domestic stock and game	93,607	80,556	80,601	81,987	80,686	81,763
Fish (except shellfish)	1,166,675	1,039,763	1,061,208	689,621	875,012	1,033,159
Total (except shellfish)	9,079,638	8,086,870	5,959,347	5,689,928	4,858,077	6,720,893

[1] Estimated by multiplying inspected slaughterings by average dressed weights, as furnished by the German Health Office. It has been assumed for the purpose of obtaining farm production that the 1923 farm slaughter was approximately the same as that reported for 1924 in the estimate as of Dec. 1.
[2] Estimated by multiplying inspected and farm slaughtering by average dressed weights.
[3] Inspected and farm production. The figures for farm slaughterings for 1924 have been used for estimating farm production, as no data are available for 1923.
[4] Estimated on basis of six months' slaughterings.
[5] Production figure not available; assumed to equal that of previous year.
[6] Includes meat brought from other parts of the Empire.
[7] Exports for 1921 available for eight months only. Imports are for whole year.
[8] Does not include corned beef.
[9] Estimated on basis of official figures for eight months only.
[10] Net exports.

The striking fact brought out in Table 55, page 73, is that there was a decrease of 198 head of livestock per 1,000 inhabitants within the territories of the Republic of Germany between 1913 and 1922. Sheep and goats increased in number. Considering cattle and swine there was a per capita decrease of 17.5 per cent in the case of the former and 39 per cent in the latter. In 1923 slaughterings were relatively somewhat less than in 1922, and there were consequently increased numbers of all classes of livestock carried over into 1924. At the end of 1924 the numbers of cattle and swine per capita had risen to 85.9 per cent of pre-war in the case of cattle and 68.7 per cent in the case of swine.

Referring to Tables 60 to 62, it is seen that the German people since the war have been on short meat and edible fats and oil rations. In 1921 per capita meat rations were estimated at 98 pounds, against 140 pounds in 1912; in 1922 they were 92, and in 1923 had fallen off to 78 pounds. Beginning with November, 1923, economic conditions in Germany began to improve, so that not only was home production greatly stimulated but importations were greater than before the war (1912) and the per capita supply increased to approximately 106.9 pounds, or 76.4 per cent, of the pre-war ration.

TABLE 60.—*Meats: Per capita supply in Germany, 1921–1924, as compared with 1912*

Meat classification	German Empire	Germany (1923 boundaries)	Republic of Germany			
	1912	1912	1921	1922	1923	1924
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Home produced:						
Beef	32.6	31.7	23.8	24.6	15.0	24.9
Veal	6.0	5.7	4.5	4.6	3.7	5.5
Pig	70.9	68.7	38.1	37.7	32.5	46.1
Mutton	2.3	2.3	2.2	1.9	1.1	1.8
Goat	.7	.6	.7	.6	.3	.4
Horse	1.4	1.4	1.3	2.0	1.3	.9
Chicken	2.5	2.4	1.9	2.9	2.1	2.0
Geese	1.6	1.5	1.4	1.7	1.3	1.3
Ducks	.2	.2	.2	.2	.1	.1
Other domestic stock and game	1.4	1.4	1.3	1.3	1.3	1.3
Fish	5.9	6.6	5.9	5.9	5.9	5.8
Total	125.5	122.5	81.3	83.4	64.6	90.1
Imported:						
Beef and veal	1.3	2.5	1.1	1.8	2.9	3.8
Pig	.7	2.9	3.7	1.6	2.3	2.3
Mutton	(1)					
Goat	(1)	.1	.1	.1	.1	(1)
Chicken	.3	.4				
Geese	(1)	.1	(1)	(1)	(1)	.1
Other domestic stock and game	(1)		(1)	(1)	(1)	(1)
Fish	12.1	11.4	11.4	5.3	8.2	10.6
Total	14.4	17.4	16.3	8.8	13.5	16.8
Total supply:						
Beef and veal	39.9	39.9	29.4	31.0	21.6	34.2
Pig	71.6	71.6	41.8	39.3	34.8	48.4
Mutton	2.3	2.3	3.0	2.6	1.5	2.2
Goat	.7	.7				
Horse	1.4	1.4	1.3	2.0	1.3	.9
Chicken	2.8	2.8	3.3	4.6	3.4	3.4
Geese	1.6	1.6				
Ducks	.2	.2	.2	.2	.1	.1
Other domestic stock and game	1.4	1.4	1.3	1.3	1.3	1.3
Fish	18.0	18.0	17.3	11.2	14.1	16.4
Total	139.9	139.9	97.6	92.2	78.1	106.9

NOTE.—Derived from Table 59, refer to it for notes, and for populations, see Tables 9 and 19.

[1] Less than 0.05.

TABLE 61.—*Edible fats and oils: Supply in Germany, 1921–1924, as compared with 1912*

Item	German Empire	Germany (1923 boundaries)	Republic of Germany			
	1912	1912	1921	1922	1923	1924
German production:	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Animal fats and oils—						
Butter	882,000	[1] 792,000	[2] 579,000	584,000	[3] 584,000	
Hog fat	1,174,000	1,012,000	531,000	530,000	579,000	
Beef fat	380,000	329,000	243,000	254,000	187,000	
Vegetable fats and oils	66,000	[4] 59,000	[3] 88,000	88,000	[3] 88,000	
Total German production	2,502,000	2,192,000	1,441,000	1,456,000	1,438,000	[5] 1,438,000
Imported supplies (net):						
Animal fats and oils—						
Butter, etc	122,000	104,000	3,000	2,000	3,000	118,000
Lard	234,000	370,000	322,000	144,000	275,000	293,000
Other animal fats [6]	130,000		118,000	126,000	118,000	101,000
Fish fats and oils	82,000	75,000	64,000	137,000	97,000	73,000
Vegetable fats and oils—						
oil, and oil from oil material	826,000	734,000	[7] 750,000	959,000	661,000	525,000
Total imported supplies	1,394,000	1,283,000	1,257,000	1,368,000	1,154,000	1,110,000
Total produced and imported:						
Animal fats and oils—						
Butter	1,004,000	896,000	582,000	586,000	587,000	
Other fats	1,918,000	1,711,000	1,214,000	1,054,000	1,159,000	
Total animal fats and oils	2,922,000	2,607,000	1,796,000	1,640,000	1,746,000	
Total fish fats and oils	82,000	75,000	64,000	137,000	97,000	
Total vegetable fats and oils	892,000	793,000	838,000	1,047,000	749,000	
Total all fats and oils	3,896,000	3,475,000	2,698,000	2,824,000	2,592,000	2,548,000

[1] Calculated on number of cows in present territory in 1912.
[2] Production per cow assumed equal to that in 1922.
[3] Total production assumed equal to that in 1922.
[4] Assumed to have been produced in present territory (divided according to population).
[5] Production figures for 1924 unavailable; assumed equal to that in 1923.
[6] Probably contains some inedible fats.
[7] Estimated on basis of official figures for eight months only.

TABLE 62.—*Edible fats and oils: Per capita supply in Germany, 1921–1924, compared with 1912*

Oils and fats	German Empire	Germany (1923 boundaries)	Republic of Germany			
	1912	1912	1921	1922	1923	1924
German production:						
Animal fats and oils—	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Butter	13.6	13.7	9.5	9.5	9.4	
Hog fat	18.1	17.5	8.7	8.6	9.3	
Beef fat	5.9	5.7	4.0	4.1	3.0	
Vegetable fats and oils	1.0	1.0	1.4	1.4	1.4	
Total German production	38.6	37.9	23.6	23.6	23.1	22.9
Imported supplies:						
Animal fats and oils—						
Butter, etc	1.9	1.8	(1)	(1)	(1)	1.9
Lard	3.6	6.4	5.3	2.3	4.4	4.7
Other animal fats	2.0		1.9	2.1	1.9	1.6
Fish fats and oils	1.3	1.3	1.1	2.2	1.6	1.1
Vegetable fats and oils and oil from oil material	12.7	12.7	12.3	15.5	10.6	8.4
Total imported supplies	21.5	22.2	20.6	22.1	18.5	17.7
Total produced and imported:						
Animal fats and oils—						
Butter	15.5	15.5	9.5	9.5	9.4	
Other fats	29.6	29.6	19.9	17.1	18.6	
Total animal fats and oils	45.1	45.1	29.4	26.6	28.0	
Total fish fats and oils	1.3	1.3	1.1	2.2	1.6	
Total vegetable fats and oils	13.7	13.7	13.7	16.9	12.0	
Total all fats and oils	60.1	60.1	44.2	45.7	41.6	40.6

NOTE.—Refer to Table 61 for notes and to Tables 9 and 19 for populations.

[1] Less than 0.05.

73727°—26†——6

It is probable that Germany will endeavor to make herself as far as possible independent of foreign meat supplies. In this endeavor the livestock industry must face the serious handicap of limited supplies of home-grown feedstuffs that can not be further increased to any considerable amount upon a profitable basis. Before the war Germany supplemented home-grown feeds by importations of large quantities of cheap barley from Russia, which are now unobtainable. Imported feedstuffs are now relatively more costly than formerly. The growth of the livestock industry, particularly in South America, has introduced a factor of competition that must be reckoned with. Use of cheap frozen beef has increased enormously during the past three years, amounting to 6,000,000 pounds in 1921–22, 24,000,000 pounds in 1922–23, and 116,000,000 pounds in 1923–24.

The future of the livestock industry in Germany involves several factors: (1) The quantity of home-grown roughage that can be profitably produced, which limits (2) The quantity of concentrated feeds that can be profitably fed, (3) The cost of imported feeding stuffs and (4) The cost of imported meat and the price that the German people are willing to pay.

Briefly the question is one of whether Germany can economically produce her total meat supplies in view of increased cost of foreign feedstuffs and the development of cheap meat supplies in other countries.

HORSES

Horse breeding in the former German Empire centered about the production of light and heavy types of horses suited to both agricultural and military uses. To the latter end the Government itself fostered the breeding of certain strains and maintained at its own expense large numbers of breeding animals in various parts of the country to build up local stock. In those districts in which the breeding of light types of horses prevailed, it was customary to employ oxen for heavy farm work. In the more highly intensive farming districts of the west and northwest heavy horses were bred for work animals which could be used for heavy cavalry and artillery purposes.

The names of Germany's important breeds of horses, the district where bred, and the purposes for which the breed was adapted appear in Table 63.

TABLE 63.—*Horses: Breeds in the German Empire, 1912*

Name and breed	Manner bred	District	Purposes
East Prussian	Most of the breeding done on small and medium-sized farms; most of the stallions owned by the State; colts brought up by large farmers and estate owners and held until mature.	East Prussia, Hanover, Mecklenburg, Posen, Schleswig-Holstein, and West Prussia.	Driving and riding; light and heavy cavalry; 60 per cent of the horses used in the German Army came from East Prussia.
Hanoverian	Mares owned by private individuals; stallions owned by State.	Departments of Stade, Lunburg, and Hanover, of the Province of Hanover; also bred in the Mecklenburgs and Brandenburg.	Riding, driving, and farm work; heavy cavalry and artillery; 11 per cent of the horses used in the German Army came from Hanover.
Oldenburg	Mares and stallions owned by private individuals and cooperatives.	Duchy and Grand Duchy of Oldenburg, Silesia, and South Germany.	Heavy carriage horses, often used for farm work; primarily artillery horses.
East Friesland	do	Department of Aurich in Province of Hanover.	Same as Oldenburg horses.
Holstein	Private individuals and cooperatives.	Western Holstein marshes, southern half of Schleswig-Holstein, the Duchy of Schleswig and Mecklenburg.	Same as Oldenburg; some of these horses were used by the Life Guards and Lancers.
Schleswig	Same as Holstein	Schleswig-Holstein	A strong working horse for farm, artillery, and draft purposes.
Rhenish	Stallions kept by the State and private individuals.	Whole district of the Rhine provinces, Westphalia, South Hanover, Saxony, Silesia, and other districts.	Similar to Belgian draft horse; used for heavy farm work, draying, and heavy guns in the artillery.
Rottal		Upper Bavaria	Light cavalry type.
Light Noric (Oberlaender).		do	Do.
Heavy Noric (Pinsgau).		Lower Bavaria	Heavy draft and artillery.

Deutsche Landwirtschafts-Gesellschaft, Berlin.

PRE-WAR HORSE SITUATION

During the 30 years preceding the war, horse breeding in Germany had not kept pace with the increase in population, there having been 78 horses per 1,000 inhabitants in 1883 as compared with 70 in 1913, although during this period the actual numbers had increased from 3,523,000 to 4,558,000, a gain of 29.4 per cent.

During this period not only had the density of horses diminished somewhat but there had been a growing tendency to breed draft animals in larger numbers, as indicated in Table 64.

TABLE 64.—*Horses: Estimated classification in Germany, 1898 and 1911*

Class	Percentage of total number	
	1898	1911
	Per cent	*Per cent*
Light horses	61.60	50.46
Heavy horses	36.03	49.42
Cross breeds		.11
Unclassified	2.37	.01

Estimate furnished by the Deutsche Landwirtschafts-Gesellschaft, Berlin.

The period from 1883 to 1913 marked a great expansion in Germany's agriculture, and consequently an increased demand for farm-work animals, especially in the north central regions of the Empire.

EFFECT OF VERSAILLES TREATY ON HORSE SITUATION

Of Germany's total number of horses in 1913, 16.1 per cent were found within the boundaries of the territories ceded to surrounding countries under the terms of the Versailles treaty. Before the war, according to the enumeration of 1913, there were 4,558,000 horses in Empire of Germany, or 70 per 1,000 inhabitants. Of this number, 3,807,000, or 66 per 1,000 inhabitants, were found within the frontiers of the present Republic. As a result of the peace treaty Germany ceded territories, including the Saar, that before the war maintained 16.5 per cent of the Empire's total number of horses, and in which there were 105 horses per 1,000 inhabitants. This loss of horses was chiefly in the territories to the east, where light cavalry types were bred, so that, although the density per 1,000 inhabitants was decreased 5.7 per cent (see Table 65) the actual significance of this loss to German agriculture was not so great as the numbers would seem to indicate.

The statistical analysis of the pre-war horse situation in the ceded districts and in the territory now composing the Republic of Germany appears in Table 65.

TABLE 65.—*Horses: Number in the districts which composed the former German Empire, 1913*

District	Total number	Per 1,000 inhabitants
	Thousands	*Number*
Germany, 1923 boundaries	3,807	66
Saar district:		
Rhine province	17	28
Bavaria	3	37
Areas ceded:		
From East Prussia—		
To Memel	34	241
To Poland	6	242
From West Prussia—		
To Danzig Free State	41	124
To Poland	155	161
From Posen to Poland	283	145
From Upper Silesia—		
To Poland	28	32
To Czechoslovakia	3	66
From Lower Silesia to Poland	4	152
From Schleswig-Holstein to Denmark	38	[1] 228
From Rhine Province to Belgium	2	33
Alsace-Lorraine to France	[1] 137	[1] 73
Total for ceded areas to neighboring countries	731	113
Total Empire	4,558	70
Per cent in ceded territories and Saar	16.5	

See Table 54 for sources.

[1] Figures for 1912. No figures for 1913 are available.

ORIGIN OF HORSES IMPORTED TO COVER GERMANY'S PRE-WAR DEFICIT (1909–1913)

Before the war Germany imported 137,739 horses, largely of the cavalry type, for use in the army and exported about 7,000 annually. These imported horses originated chiefly in Russia, Denmark, Belgium, and the Netherlands. (See Table 67.) Carriage and draft animals were exported to Switzerland and breeding animals to the Netherlands and Austria.

POSTWAR HORSE SITUATION

During the war Germany lost a large number of horses, but conserved the breeding stock to a high degree, so that in 1922 there were only 116,000 fewer horses in the Republic than in the same territory before the war. Because of increased population the density per 1,000 inhabitants was 60 in 1922 as compared with 66 in 1913. (Table 66.) In 1924 the census of December 1 places the number of civilian horses at 3,850,000, in addition to which there were about 40,000 military horses. This is a larger number of horses, by 83,000, than was found within the boundaries of the present Republic in 1913, but because of the increased density of the population the number per thousand inhabitants—62—is still less than before the war.

TABLE 66.—*Horses: Number in Germany in 1922 and 1924, as compared with 1913*

Description	Unit	Boundaries of 1923		
		1913	1922	1924
Total number	Thousands	3,807	[1] 3,691	[1] 3,890
Difference	do		−116	+83
Percentage of difference	Per cent		−3.0	+2.2
Per 1,000 inhabitants [2]	Number	66	60	62

[1] Includes 40,000 military horses.
[2] For population see Table 19.

During the last few years a few horses have been imported, largely from Denmark and the Netherlands, as shown in Table 67.

TABLE 67.—*Horses: Foreign trade [1] of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average, 1909–1913	1921	1922	1923
	Number	*Number*	*Number*	*Number*
Russia	+55,356	[2]	[2]	[2]
Denmark	+26,640	+25,741	+4,975	+6,851
Belgium	+23,591	+2,248	+438	[2]
Netherlands	+13,157	+11,752	+4,709	+1,763
Czechoslovakia		+8,182	+732	[2]
Austria	+6,725	+7,542	+4,753	+1,877
Hungary		+1,798	[2]	[2]
Memel		+1,613	+209	+288
Luxemburg		+1,595	+813	[2]
Danzig		+1,143	+674	+475
France	+5,968	[2]	[2]	[2]
Great Britain	+2,352	+256	[2]	[2]
Yugoslavia		+97	+124	[2]
Sweden	+367	+2,593	+687	[2]
British South Africa	−1	[2]	[2]	[2]
Argentina	−4	[2]	[2]	[2]
United States	−6	[2]	[2]	[2]
Switzerland	−5,024	−43	−30	[2]
Saar district		−98	−133	[2]
Other countries	+1,433	+12,301	+4,585	+4,936
Total	+130,554	+76,720	+22,536	+16,190

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.

The horsepower on German farms is now well up to the pre-war standard and can be maintained with but few importations. This is especially true since the Republic does not maintain a large standing army and therefore does not withdraw from the farms such large numbers of horses of the cavalry and artillery types as was the case under the Government of the Empire.

CATTLE

The cattle of Germany are divided into two main classes, the highland and the lowland, each having a large number of subclasses and breeds. The lowland cattle, found principally in the north and east of Germany, are valued chiefly for their milk production. They are also moderately good beef animals. They have a mediocre capacity as work animals and are used only to a slight extent in farm work. "The breeders aim at high milk yield, good grazing quality and beauty of form, combined with a robust constitution." Bullocks, 2½ to 3 years old weigh about 1,500 pounds and cows about 1,600 pounds. Bulls dress out 58 per cent of live weight, cows 55 per cent. Production ranges from 12,600 pounds milk with 3 per cent butterfat down to 7,400 pounds milk with 3.32 per cent butterfat for average herds. Table 68 gives the distribution and indicates the relative importance of the principal breeds.

TABLE 68.—*Cattle: Distribution of the German lowland breeds, based on survey made in 1906*

Type	Breeding district	Per cent of total number of lowland cattle	Per cent of total number of all cattle	Tendencies to increase or decrease since 1906
Pedigree black and white lowland cattle (Holstein-Friesian).	East Friesland, Jeverland, Weser-Marsh, Pomerania, West and East Prussia, some districts of South Germany.	51.03	28.42	This is the favored breed of high milk capacity cattle. Its number and distribution are increasing. Animals entered in various herd books and alive on Jan. 1, 1911: Bulls 2,147; Cows 64,043; Heifers 14,170; Total 80,360
Pedigree red and white lowland cattle.	Rhineland and Westphalia.	7.23	3.82	Animals entered in various herd books and alive on Jan. 1, 1911: Bulls 643; Cows 4,355; Total 4,998
Red and white Holstein breeds.	Holstein, Elbe, Breitenburg, and Wilster marshes.	5.46	3.14	Although a large number of cows is registered, the breed is limited to home districts.
Angeln cattle	The peninsula of Angeln, in Schleswig-Holstein.	1.62	.90	A local breed.
Shorthorns	West coast of Schleswig-Holstein and Palatinate.	2.33	1.34	Animals entered in herd books and alive Jan. 1, 1911: Bulls 321; Cows 4,945; Total 5,266
Red East Friesland cattle.	East Friesland	.56	.31	Of local importance.
Other breeds	North and central Germany.	31.77	17.82	Progressively decreasing in view of increase of pedigree breeds.

Deutsche Landwirtschafts-Gesellschaft, Berlin.

The mountain cattle of South Germany (Table 69) are larger, as a rule, than the lowland cattle of the north. The southern cattle weigh:

	Pounds
Bullocks:	
First quality	1,750–2,000
Second quality	1,650
Third quality	1,320
Cows:	
First quality	1,540
Second quality	1,430

Bull dress out as high as 57.7 per cent of their live weight.

In some districts, particularly in Southern Germany, cows are worked in the fields and dairying is of secondary importance. Generally, however, the farm work is done by horses and oxen, and in these districts, especially in the northwestern provinces, milk and butter production is on a paying basis. Average milk yield in Upper Bavaria is put at 5,730 pounds, the largest yield recorded being 8,790 pounds. The butterfat content ranges from 3.7 to 4.1 per cent.

There has been a tendency during recent years among breeders to aim toward developing a dual-purpose cow by increasing milk yield without reducing the meat capacity. The mountain cattle, particularly the cream and gray-brown, are nearly all descendants of the Simmenthal breed.

TABLE 69.—*Cattle: Distribution of the German highland breeds, based on survey made in 1906.*

Type	Breeding district	Per cent of total number of mountain cattle	Per cent of total number of all cattle	Tendencies to increase or decrease since 1906
Light-colored mountain cattle.	Bavaria, Wurttemberg, Baden, Thuringia, Saxony, Posen, Brandenburg, Mecklenburg.	51.35	22.73	Strong increase until 1914; then less progress; another increase during the past years.
Uniformly yellow Franken mountain cattle.	North Bavaria, Wurttemberg, Hessen-Nassau, Thuringia.	14.04	6.21	Breeds improved during the past years; gained in importance.
Gray-brown mountain cattle.	Bavaria, Wurttemberg	5.32	2.36	Importance limited to breeding districts.
Red cattle of central Germany.	Westphalia, Hanover, Hessen-Nassau, Waldeck, both Saxonies, Bavaria, Silesia, Hessen.	6.14	2.72	Breeds improved through organization; important merely for home-breeding districts.
Red and brown cattle with white head.	Rhine Province, Hessen-Nassau, Bavaria, Westphalia.	1.72	.76	Little importance; decreasing.
Pinzgau cattle with white stripe on back.	Bavaria, Silesia	3.79	1.69	Importance decreasing steadily; supplanted more and more by other breeds.
Small colored mountain cattle.	Baden, Wurttemberg	1.10	.49	No importance.
Other breeds	South and central Germany.	16.54	7.29	Decreasing in proportion to increase of better breeds.
		100.00	44.25	

Deutsche Landwirtschafts-Gesellschaft, Berlin.

PRE-WAR CATTLE SITUATION

There was a considerable increase in the actual numbers of cattle held on German farms during the 30 years preceding the war but the actual ratio of cattle to population had decreased by the end of the period. In 1883 there were 15,787,000 cattle in Germany, whose population at that time was 45,222,113, resulting in a cattle density

of 349 per 1,000 inhabitants. In 1913 the population had increased to 64,925,993, while the numbers of cattle had increased to 20,994,000, giving a ratio of 323 animals to each 1,000 inhabitants.

As in the case of swine, so with cattle; the factors of cost of feed, the extent of available pasturage, and the price obtainable for meat, butter, and other products limit the degree to which the products of agricultural lands can be devoted to dairying or to beef production. Under the conditions just preceding the war that limit had been nearly approached in Germany

EFFECT OF VERSAILLES TREATY ON CATTLE SITUATION

Of Germany's total number of cattle in the year 1913, 11.6 per cent were found within the boundaries of the territories that later were ceded to neighboring countries. The important factor to the animal industry is not so much the actual numbers of percentage of the total animals of the German Empire that were found in the ceded districts as the relative density of animals to population; that is, the number of livestock per 1,000 inhabitants.

Before the war, according to the enumeration of 1913, there were 20,994,000 cattle in the Empire, of which 11,320,000 were cows of two years or older. Within the frontiers of the present Republic there were 18,476,000 cattle, including 9,973,000 cows.

As a consequence of the treaty of peace, Germany lost territories, including the Saar, that before the war maintained 12 per cent of the total cattle and 11.9 per cent of the cows. The cessions of territory did not, however, materially affect Germany's cattle industry as a whole, since the difference in the cattle density of the Empire and the Republic was only 1 per cent.

The statistical analysis of the pre-war cattle situation in the ceded districts and in the territory now comprising the Republic of Germany appears in Table 70.

TABLE 70.—*Cattle: Number in the districts which composed the former German Empire, 1913*

District	Total cattle		Cows 2 years and older	
	Total number	Per thousand inhabitants	Total number	Per thousand inhabitants
	Thousands	*Number*	*Thousands*	*Number*
Germany, 1923 boundaries	18,476	320	9,973	173
Saar district:				
Rhine Province	58	101	37	65
Bavaria	16	198	10	124
Areas ceded:				
From East Prussia—				
To Memel	76	538	46	326
To Poland	16	645	8	323
From West Prussia—				
To Danzig Free State	77	233	48	145
To Poland	421	436	235	244
From Posen to Poland	867	445	451	232
From Upper Silesia—				
To Poland	96	107	59	66
To Czechoslovakia	15	330	9	198
From Lower Silesia to Poland	16	610	9	343
From Schleswig-Holstein to Denmark	255	1,333	106	637
From Rhine Province to Belgium	54	900	28	467
Alsace-Lorraine to France	551	294	301	161
Total for ceded areas	2,444	378	1,300	201
Total Empire	20,994	323	11,320	174
Per cent in ceded districts and Saar	12.0		11.9	

See Table 54 for sources.

POSTWAR CATTLE SITUATION

As a result of the conditions of heavy demand for meat supplies during the war and the unsettled state of economic conditions following the treaty of Versailles, the numbers of cattle have diminished, but not to the extent that might be expected. (Table 71.) Breeding stock was maintained well up to pre-war level, there being within the present boundaries of the Republic, in 1922 only 17.7 per cent, in 1923 only 16.7, and in 1924, 11.8 per cent fewer cows than in 1913. There appears to have been a general tendency throughout Germany to maintain the livestock industry nearer to the level of the pre-war status than was the case with the cereal production. The production of livestock in Germany is limited to the quantity of forage the German farmers are able to produce, and this will always be measured by utility—whether meat or bread cereals give the most profitable returns from a given area.

Although the total numbers of cattle on hand December 1 decreased only 11.7 per cent in 1922, 12.9 in 1923, and 6.4 in 1924 as compared with 1913, the increase in population has brought the density (number of head per 1,000 inhabitants) down to 17.5, 19.4, and 14.1 per cent, respectively, below pre-war.

TABLE 71.—*Cattle: Number in Germany, 1922–24, as compared with 1913* [1]

Item	Unit	Boundaries of 1923			
		1913	1922	1923 [2]	1924
Number of cows	Thousand	9,973	8,206	8,308	8,796
Other cattle	do	8,503	8,110	7,783	8,500
Total cattle	do	18,476	16,316	16,091	17,296
Drop in number below pre-war:					
Cows	do		1,767	1,665	1,177
Other cattle	do		393	720	3
Total cattle	do		2,160	2,385	1,180
Per cent of drop:					
Cows	Per cent		17.7	16.7	11.8
Other cattle	do		4.6	8.5	----
Total cattle	do		11.7	12.9	6.4
Per 1,000 inhabitants: [3]					
Cows	Number	173	133	133	140
Other Cattle	do	147	131	125	135
Total cattle	do	320	264	258	275

[1] Census as of Dec. 1.
[2] The number of cattle in Germany on Oct. 1, 1923, was 16,691,000, from which was subtracted the slaughtering during October and November to obtain the number on hand Dec. 1.
[3] For populations see Table 19.

ORIGIN OF THE CATTLE IMPORTED TO COVER DEFICIT

Before the war the German Empire imported large numbers of cattle from Denmark and the Austro-Hungarian Empire. The postwar economic conditions within Germany, coupled with the greatly reduced purchasing power of the people and the general consequent reduction in the use of meat in the diet in urban and industrial centers, reacted to cut down the importation of animals for slaughter, but when prorated over the population this drop in importation is not of great significance, being only 2 animals per 1,000 inhabitants in the season of 1921–22, 2.6 animals in 1922–23, and 2.5 in 1923–24, as shown in Table 72.

TABLE 72.—*Cattle: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average, 1909–1913	1921	1922	1923
	Number	*Number*	*Number*	*Number*
Denmark	+136,367	+33,873	+39,842	
Austria	+58,933	+6,247	+429	
Hungary	([2])	+5,242	+63	
Czechoslovakia		+12,795	([3])	
Rumania	([3])	+9,900	+119	
Sweden	+5,316	([3])	([3])	
France	+4,071	([3])	([3])	
Netherlands	+3,003	+11	([3])	
Switzerland	+2,658	([3])	([3])	
Memel		+22,836	+14,031	
Poland		+1,986	([3])	
Danzig		+459	([3])	
Great Britain	+4	([3])	([3])	
Peru	−5	([3])	([3])	
Russia	−222	([3])	([3])	
Saar district		−6,023	−6,137	
Other countries	+3,819	+6,535	+3,780	
Total	+213,944	+93,861	+52,127	[4] +60,997
Drop below pre-war total		120,083	161,817	152,947
Per cent of drop		56.1	75.6	71.5
Drop per 1,000 inhabitants [5]		2.0	2.6	2.5

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] Included in Austria.
[3] If any, included in other countries.
[4] Not available by countries.
[5] For populations see Table 19.

Before the war Germany imported about 53,000,000 pounds of fresh and prepared beef largely from Denmark and the Netherlands. The United States supplied only 4 per cent of Germany's foreign beef requirement. (Table 73.)

TABLE 73.—*Beef, fresh and prepared: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of pounds—000 omitted]

Country	Year beginning July 1			
	Average, 1909–1913	1921 [2]	1922 [2]	1923 [2]
Denmark	+26,078	+1,756	+1,166	+427
Netherlands	+13,743	+3,259	+1,370	([3])
Sweden	+4,289	+224	+294	([3])
Russia	+2,715	([3])	([3])	([3])
United States	+2,267	+20,270	+14,008	+14,039
Brazil	([3])	+8,654	+6,881	+8,465
France	+2,146	([3])	([3])	([3])
Austria-Hungary	+948	([3])	([3])	([3])
Esthonia	([3])	+313	+20	([3])
Great Britain	+251	+426	+4,005	([3])
Australia	+164	+8,118	+4,696	([3])
Argentina	+2	+5,639	+23,431	+115,732
New Zealand	([3])	+2,403	+751	([3])
Uruguay	([3])	+188	+1,120	([3])
Belgium	+138	([3])	([3])	([3])
Switzerland	+133	([3])	([3])	([3])
Italy	+17	([3])	([3])	([3])
Serbia	+4	([3])	([3])	([3])
Canada	+4	([3])	([3])	([3])
Helgoland	−73	−83	([3])	([3])
Saar district		−317	−1,245	([3])
Other countries	+285	+5,213	+6,871	+13,613
Total	+53,111	+56,063	+63,368	+152,276

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] Includes frozen beef.
[3] If any, included in other countries.

Since the war the shipments of beef by the United States to Germany have fallen off rapidly in relative importance. In 1921–22 these shipments amounted to 36 per cent, in 1922–23 to 22 per cent, and in 1923–24 to only 9.2 per cent of the total imports of beef into the Republic. During 1922–23 Argentina greatly supplanted all other countries of the world in shipping beef to Germany, primarily because of the crisis in the animal industry in Argentina and the very low prices quoted on beef. During the season 1923–24 these shipments of frozen beef increased to a round 116,000,000 pounds, or 76 per cent of the total importations. If this trade continues, Argentina may become a serious competitor of the German farmer engaged in livestock production. It is to be expected that in all probability the German beef trade with the United States will drop back to its pre-war status of occasional shipments, determined by price and the condition of our own markets.

BUTTER

Germany imported about 118,000,000 pounds of butter during the calendar year 1924, exceeding average pre-war imports of the Empire by 7,000,000 pounds. (Tables 74 and 75.) Of this quantity Denmark supplied 59,000,000 pounds, an increase over the preceding year of 57,000,000 pounds. This is of interest to farmers of the United States, because if Germany continues to take such large quantities of butter from Denmark the Danes will discontinue, proportionately, their butter shipments to the United States.

TABLE 74.—*Butter: Foreign trade of Germany, average, 1909–1913*

Country	Imports (+)	Exports (−)	Net imports (+) Net exports (−)
	Pounds	*Pounds*	*Pounds*
Russia in Europe and Russia in Asia	52, 986, 900		+52, 986, 900
Netherlands	36, 677, 269		+36, 677, 269
Denmark	11, 681, 073		+11, 681, 073
Finland	4, 521, 414		+4, 521, 414
Austria-Hungary	3, 355, 181	88, 845	+ 3, 266, 336
Sweden	828, 268		+828, 268
France	482, 146		+482, 146
Turkey in Asia	5, 291		+5, 291
Helgoland		78, 263	−78, 263
Switzerland	59, 965	194, 005	−134, 040
Other countries	843, 700	136, 906	+706, 794
Total	+111, 441, 207	−498, 019	+110, 943, 188

Germany, Kaiserliches Statistisches Amt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

TABLE 75.—*Butter: Foreign trade*[1] *of Germany, 1922–1924*

Country	Calendar years		
	1922	1923	1924
	Pounds	*Pounds*	*Pounds*
Argentina	+919, 759		(2)
Great Britain	+606, 706		(2)
Australia	+567, 023		(2)
Denmark	+11, 243	+1, 533, 519	+58, 633, 101
Memel	+144, 842	+104, 057	(2)
Netherlands	+69, 445	+1, 152, 124	+32, 172, 169
Saar	−552, 914	−92, 593	(2)
Other countries	−26, 895	+58, 863	+27, 031, 703
Total	+1, 739, 209	+2, 755, 970	+117, 836, 973

Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.

SWINE

Swine breeding is distributed generally throughout Germany, but by far the greatest numbers are kept on the large dairy farms in the north and northwest provinces, as indicated by the cattle to swine ratio in Table 76.

TABLE 76.—*Cattle to swine ratio in Germany, by districts, 1913*

District	Households owning livestock	Cattle		Swine		Ratio, cattle to swine
		Total	Per household	Total	Per household	
North, west, and central:	*Number*	*Number*	*Number*	*Number*	*Number*	
Hanover	358,926	1,368,429	4	3,352,588	9	
Schleswig-Holstein	145,645	1,141,371	8	1,763,624	12	
Pomerania	193,763	862,080	4	1,329,794	7	
Brandenberg	285,742	906,098	3	1,378,460	5	
Westphalia	375,110	751,114	2	1,546,087	4	
Oldenburg	63,703	344,824	5	620,874	10	
Thuringia	269,844	658,359	2	1,158,806	4	
Province of Saxony	322,201	829,238	3	1,591,089	5	
Total	2,014,934	6,861,513		12,741,322		1 to 1.9
East:						
East Prussia	257,887	1,236,752	5	1,337,464	5	
West Prussia	187,442	709,936	4	1,026,525	5	
Posen	249,024	938,881	4	1,315,040	5	
Silesia	406,431	1,650,948	4	1,394,402	3	
Total	1,100,784	4,536,517		5,073,431		1 to 1.1
South:						
Bavaria	610,123	3,702,735	6	2,106,312	3	
Wurttemberg	232,766	1,123,903	5	583,672	3	
Baden	229,705	684,508	3	581,024	3	
Hohenzollern	10,480	49,651	5	30,653	3	
Total	1,083,074	5,560,797		3,301,661		1 to 0.6
Southwest:						
Rhineland	460,137	1,221,327	3	1,228,584	3	
Hessen-Nassau	203,882	622,907	3	768,790	4	
Kingdom of Saxony	172,297	713,928	4	760,291	4	
Alsace-Lorraine	179,174	550,517	3	492,873	3	
Other districts	271,356	926,838	4	1,292,188	5	
Total	1,286,846	4,035,517		4,542,726		1 to 1.1
Total for Empire	5,485,638	20,994,344	4	25,659,140	5	1 to 1.2

Germany, Kaiserliches Statistisches Amt. (now Statistisches Reichsamt), Vierteljahrshefte zur Statistik des Deutschen Reichs, vol. 23, 1914.

With the exception of a small part of Schleswig-Holstein that was ceded to Denmark, the territory in which there was a high hog to cattle ratio (1.9 to 1) remained within the German Republic. Both on the east and the west the ceded territories were about average (a little below) as pork-producing districts. The very low ratio of the southern districts is due to the fact there there are fewer swine per capita in these districts, and since the larger part of the farm work in these districts is of the peasant type on small holdings it is done by oxen rather than by horses. There is consequently a somewhat higher number of cattle per household in the south than in the north.

The manner in which swine are kept in Germany varies greatly "from an almost outdoor life to being kept nearly entirely in piggeries." They are fed on skim milk from the creameries in the northern and northwestern provinces, potatoes, roots, and various kinds of

grain and other feedstuffs. They also are turned into the fields after the harvest and in some instances are herded on grass, especially in the south. During the fattening period the improved breeds are universally housed. In Bavaria and some other parts of Germany the native unimproved swine run in the woods and fields and are never housed.

BREEDS

Several of the large white English breeds, as well as Berkshire are popular throughout Germany, though found for the most part in the north and northwest dairy sections. (Table 77.) Improved native pigs are bred especially in Hanover, Saxony, and Westphalia for size and to mature a little later than the finer English breeds. In Bavaria, Hanover, and Brunswick hardy late-maturing strains are popular, where swine are bred to withstand all conditions of climate, as they are kept at all times in the open. The sows of this breed crossed with Berkshires or Large Whites, produce pigs that can be fattened profitably.

TABLE 77.—*Swine: Breeds in the German Empire, 1912*

Name	Feed	District	Characteristics
Large White (imported from English breeders).	Skim milk, potatoes, roots, grains, and other feedstuffs; pastured in fields after the harvest and on grass.	Distributed all over Germany; largest numbers are on the large dairy farms of the northwest.	General-purpose animal; meat of fine texture.
Improved Native (lop-eared marsh pig × English Whites).	Same as above	Every part of Germany; especially in Hanover, Saxony, and Westphalia.	Hardy, later maturing, and coarser flesh than above.
Berkshire (imported from England).	do	A few herds scattered throughout Germany.	Early maturing, good meat animal.
Native pigs	Run in woods, pastures, and harvest fields; never housed.	Hanover, Brunswick and Bavaria.	Long legs and narrow bodies; late maturing, coarse meat; sows used to cross with Berkshires and Large Whites.

Deutsche Landwirtschafts-Gesellschaft, Berlin.

PRE-WAR SWINE SITUATION

During the 30-year period preceding the war Germany vastly expanded her swine production both in actual numbers and in relative density, the numbers of swine increasing almost twice as rapidly as the population.

In 1883 there were 9,206,000 swine in Germany, or 204 per 1,000 inhabitants. By 1913 the number had increased to 25,659,000, or 395 per 1,000 inhabitants.

The development of the swine industry is limited by the factors entering into cost of meat production; that is to say, the relation of the price received at the farm (influenced by the market price of fresh and prepared pork products imported into the country) and the cost of feed, much of which, especially for finishing the hogs, must be imported. This balance between the price receivable and the cost of feeding stuffs is the limiting factor not only in swine production but in the production of all animals and animal products.

EFFECT OF VERSAILLES TREATY ON SWINE SITUATION

Before the war, according to the enumeration of 1913, there were 25,659,000 swine in the Empire, or 395 per 1,000 inhabitants. Of this number, 22,533,000, or 390 per 1,000 inhabitants, were found within the frontiers of the present Republic. As a result of the peace treaty, Germany lost territories that before the war maintained 12.2 per cent of the Empire's total number of swine. This loss did not, however, materially affect the relative density of swine because the greatest concentration of the swine industry was in the dairy centers of the central northern districts that remained to the Republic.

The statistical analysis of the pre-war swine situation in the ceded districts and in the territory now composing the Republic of Germany appears in Table 78.

TABLE 78.—*Swine: Number in the districts which composed the former German Empire, 1913*

District	Total number	Per thousand inhabitants
	Thousands	*Number*
Germany, 1923 boundaries	22,533	390
Saar district:		
Rhine Province	88	154
Bavaria	18	222
Areas ceded:		
From East Prussia—		
To Memel	138	977
To Poland	21	847
From West Prussia—		
To Danzig Free State	92	278
To Poland	648	672
From Posen to Poland	1,223	628
From Upper Silesia—		
To Poland	134	150
To Czechoslovakia	13	286
From Lower Silesia to Poland	17	648
From Schleswig-Holstein to Denmark	218	1,311
From Rhine Province to Belgium	23	383
Alsace-Lorraine to France	493	263
Total for ceded areas	3,020	467
Total Empire	25,659	395
Per cent in ceded districts and Saar	12.2	

See Table 54 for sources.

POSTWAR SWINE SITUATION

During the war the number of Germany's swine was greatly depleted. (Table 79.) The estimates of the swine on farms in 1922 place the actual numbers 35 per cent below the 1913 estimates, while on account of the increase in population, the density per 1,000 inhabitants was 39 per cent below pre-war.

The limiting factor to the numbers of swine that can be maintained on German farms is the quantity of feed available at prices that make profitable the preparation of hogs and pork products for the local markets. The year 1922 ended with a large potato crop and consequently an abundance of cheap feed. The potato crop in 1923 was nearly up to the pre-war average, and in that year the numbers of swine on German farms increased 1,200,000 over 1922, the density per 1,000 inhabitants rising from 238 to 254.

In 1924 the potato crop was normal and the numbers of swine per 1,000 inhabitants increased to 268. It is expected that the swine density will tend to return to Germany's pre-war normal.

TABLE 79.—*Swine: Number in Germany, 1921–1924, as compared with 1913* [1]

Item	Unit	Boundaries of 1923			
		1913	1922	1923 [2]	1924
Total number	Thousands	22,533	14,678	15,832	16,844
Drop below pre-war	do		7,855	6,701	5,689
Percentage of drop	Per cent		34.9	29.7	25.2
Per 1,000 inhabitants [3]	Number	390	238	254	268

[1] Census as of Dec. 1.
[2] In 1923 the livestock census was taken on Oct. 1. The Dec. 1 figure is obtained by subtracting from 17,308,000 the slaughtering during October and November.
[3] For populations see Table 19.

FOREIGN TRADE IN SWINE

Russia was Germany's chief source of supply for live pigs before the war with a relatively insignificant importation from other countries. (Table 80.)

TABLE 80.—*Swine: Foreign trade* [1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923
	Number	*Number*	*Number*	*Number*
Yugoslavia		+150,284	+1,705	(2)
Russia	+120,200	(2)	(2)	(2)
Memel		+41,082	+39,926	+24,071
Poland		+15,112	(2)	(2)
Rumania	(2)	+13,402	(2)	(2)
Switzerland	−9,902	(2)	(2)	(2)
Austria	−807	(2)	(2)	(2)
Hungary		+6,624	+72	(2)
Denmark	(2)	+4,084	+3,578	(2)
Esthonia, Latvia, and Lithuania		+2,237	(2)	(2)
Czechoslovakia		+962	(2)	(2)
France	+89	(2)	(2)	(2)
Great Britain	+28	(2)	(2)	(2)
Netherlands	+21	(2)	(2)	(2)
Saar district		−23,938	−6,867	(2)
Other countries	+1,066	+12,034	+30	+99,915
Total	+110,695	+221,883	+38,444	+123,986

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt). Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.

There was a drop in swine importations during 1922–23, probably due to currency fluctuations, but the average importation of swine into the Republic (1921–1924) is well up to the pre-war average importation of the Empire.

In addition to the considerable number of live pigs, Germany imported before the war an average of about 28,000,000 pounds of fresh and simply prepared pork. These importations were chiefly from the Netherlands, Denmark, and Russia. The United States

played a comparatively insignificant rôle as a source of German fresh pork supplies, shipping only 0.35 per cent of Germany's total importation, as shown in Table 81.

TABLE 81.—*Pork, fresh and simply prepared: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of pounds—000 omitted]

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923
Netherlands	+10,925	+1,532	+915	+4,714
Denmark	+8,513	+3,030	+11,662	+21,582
Russia	+5,613	(2)	(2)	(2)
Argentina	(2)	+629	+268	+2,599
Sweden	+1,076	+571	+1,647	+1,495
Great Britain	+692	(2)	(2)	(2)
Serbia	(2)	+381	(2)	(2)
Austria-Hungary	+223	(2)	(2)	(2)
Canada	(2)	+139	+154	[3] +163
Belgium	+151	(2)	(2)	(2)
Switzerland	+108	(2)	(2)	(2)
United States	+99	+59,473	+22,700	+34,829
France	+49	(2)	(2)	(2)
Helgoland	−107	(2)	(2)	(2)
Saar district		−135	−394	(4)
Other countries	+1,001	+16,739	+1,456	+16,015
Total	+28,343	+82,359	+38,408	+81,397

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Six months only, July to December, 1923. Last six months included in other countries and total.
[4] Less than 500 pounds.

During the seasons 1921–22 and 1922–23 the United States occupied first place as a market from which Germany bought fresh pork, sending to that country more fresh pork than all other nations combined. During the season 1923–24, however, Denmark and the Netherlands encroached heavily upon United States trade. Except in years of heavy overproduction in America, with consequent cheap pork, it is to be expected that Germany can buy more satisfactorily from neighboring countries than from the United States. Argentina may develop a frozen-pork trade with Germany in competition with the United States, as indicated by the appreciable shipments of more than 2½ million pounds during the past season. The importations of fresh pork into the Republic in 1921–22 were 2.9 times as much as the importations into the whole Empire before the war; in 1922–23 they were 1.4 times as much and in 1923–24 they were again 2.9 times as much, as shown in Table 81.

The trade of the United States with Germany in lard and bacon has greatly increased since the war, but importations during the first six months of the fiscal year 1924–25 indicate an appreciable decline. (Table 82.) During the season 1923–24 the total net lard imports of the Republic were 295,000,000 pounds, against an average of 204,000,000 pounds for the Empire during 1909–1913; the importations of bacon were 90,000,000 pounds in 1923–24, against 2,700,000 pounds during 1909–1913. (Tables 83, 84, and 85.)

BUTTER V. PORK FATS

On account of the depressed economic condition of the Republic, pork fats have been substituted for butter to a considerable degree. Before the war the German Empire imported 111,000,000 pounds of butter annually. During the calendar year 1923 the butter importation of the Republic was only 2,800,000 pounds. Between January 1 and June 30, 1924, importations of butter into Germany increased to 40,000,000 pounds and during the next six months rose to 78,000,000 additional pounds, totaling 118,000,000 pounds for the year. It is probable that the decrease in our shipments of lard and bacon to Germany during the last six months of 1924 is attributable to this greater use of butter as a source of fat.

TABLE 82.—*Lard and bacon importations into Germany from the United States contrasted with total butter importations, 1924*

[Thousands of pounds—000 omitted]

Item	January–June, 1924	July–December, 1924
Lard (from United States)	138,567	109,843
Bacon (from United States)	33,459	19,982
Butter (from all countries)	40,017	77,820

Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

TABLE 83.—*Lard: Foreign trade[1] of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

[Thousands of pounds—000 omitted]

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923
United States	+192,184	+217,530	+172,519	+256,478
Denmark	+5,981	+6,721	+9,571	[2] +7,825
Netherlands	+2,481	+13,255	+12,972	[2] +7,052
Argentina	[3]	+282	+1,032	[2] +298
Serbia	+2,418	[3]	[3]	[3]
France	+255	[3]	[3]	[3]
Other countries	+477	+2,197	+775	+22,885
Total	+203,796	+239,985	+196,869	+294,538

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt.) Monatliche Nachweise über den Auswärtigen Handel Duetschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] Six months only, July to December, 1923. Last six months included in other countries and total.
[3] If any, included in other countries.

TABLE 84.—*Bacon: Foreign trade* [1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average 1909–1913	1921	1922	1923
	Pounds	*Pounds*	*Pounds*	*Pounds*
United States	+1,556,889	+70,473,566	+63,771,362	+85,905,987
Belgium	+276,677	(2)	(2)	(2)
Denmark	+225,751	(2)	(2)	(2)
France	+159,613	(2)	(2)	(2)
Netherlands	+117,726	+429,456	+2,346,135	[3] +975,756
Switzerland	+58,422	(2)	(2)	(2)
Serbia	+21,826	(2)	(2)	(2)
Great Britain	+16,314	(2)	(2)	(2)
Austria-Hungary	+221	(2)	(2)	(2)
Helgoland	−1,543	(2)	(2)	(2)
Saar district		−54,895	−165,786	[3] −25,794
Other countries	+225,090	+3,478,638	+584,880	+3,175,947
Total	+2,656,986	+74,326,765	+66,536,591	+90,031,896

Germany, Statistisches Reichsamt (formerly Kaiserliches Statitsisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Six months only, July to December, 1923. First six months of 1924 included in other countries and total

TABLE 85.—*Ham: Foreign trade* [1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average, 1909–13	1921	1922	1923
	Pounds	*Pounds*	*Pounds*	*Pounds*
Austria-Hungary	+892,643	(2)	(2)	(2)
Netherlands	+323,194	+235,231	+182,761	[3] +69,224
Denmark	+75,838	(2)	(2)	(2)
Great Britain	+21,605	(2)	(2)	(2)
Russia	+19,621	(2)	(2)	(2)
Belgium	+2,866	(2)	(2)	(2)
United States	−191,139	+1,626,995	+291,448	[3] +267,859
Switzerland	−242,506	(2)	(2)	(2)
France	−2,004,643	(2)	(2)	(2)
Saar district		−11,243	−92,593	[3] −5,952
Other countries	−439,818	+121,473	−5,512	+357,366
Total	−1,542,339	+1,972,456	+376,104	+688,497

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Six months only, July to December, 1923; first six months of 1924 included in other countries and total.

SHEEP

In several districts of Germany, particularly in the south, distinct types of sheep have been bred for centuries (Table 86.) These have become so identified with their respective localities and are so well suited to the climatic and agricultural conditions that neither the merinos nor sheep imported from England have been able entirely to dislodge them from their position. About a third of the sheep of the German Empire are of these native strains.

TABLE 86.—*Sheep: Classification according to type in Germany, survey of 1912*

Type	Number	Per cent of total number
Merino	1,697,596	29.13
Crossbreeds of merino type	566,806	9.72
Total	2,264,402	38.85
Mutton	232,336	3.99
Crossbreeds of mutton type	1,063,495	18.25
Other crossbreeds	183,309	3.15
Total	1,479,140	25.39
German native [1]	1,382,311	23.72
Crossbreeds of German	582,438	9.99
Total	1,964,749	33.71
Indefinite	119,650	2.05
Total sheep	5,827,941	100.00

Deutsche Landwirtschafts-Gesellschaft, Berlin.

[1] A hardy coarse-wooled sheep kept in heath or mountain regions where the other breeds are not profitable.

The local superiority of the native sheep arises from the following facts: They are well qualified to make the best possible use of the feed that grows in their neighborhoods. The young animals produce mutton of a good and sometimes excellent quality. The ewes in some instances have a high milk yield and form an excellent foundation for crossbreed purposes for the production of lambs to be fattened for market. Crossbreeds grow quickly and reach maturity early. For this reason the ewes of the different breeds are largely reared to maturity by the small farmers themselves. The native breeds are not less important for small farms, on which the sheep are reared on rough forage, than they are on the larger farms, where they get a liberal supply of oil cake and corn. The best-known breeds of these native sheep are the Franken, the bastard of Wurttemberg, the Rhön, and the milk sheep of East Friesland.

Franken sheep are produced in the Kingdom of Bavaria, in the governments of Lower and Upper Franken. This breed has spread to neighboring Thuringia, to some localities in Wurttemberg, and even as far as Baden. This is a hardy and robust breed, capable of withstanding rough climatic and poor grazing conditions, producing meat of an excellent quality and strong, if coarse, wool.

The Wurttemberg bastard sheep owes its origin to a cross of the Spanish merino with the Franken sheep, which took place about the eighteenth century. The merino blood was used in various degrees, so that two types came into existence, the fine and the rough bastard, indicating the quality of the wool, which is produced in paying quantities.

The Rhön sheep originated in the Rhön Mountains and is a most hardy breed, capable of withstanding extremes in temperature, and produces a fair quantity of wool of medium quality.

The East Friesland milk sheep are found rather generally throughout Holstein and Schleswig, as well as in the Netherlands. The chief consideration of this breed is milk and lamb production. The ewe can be milked from 150 to 200 days in the year, with a yearly product

of more than 1,000 pounds if on good pastures. The milk contains from 5 to 6 per cent of butterfat and is therefore excellent for cheese making, and butter is sometimes produced from it.

The merino has held an important place (39 per cent of all sheep in Germany being of this extraction) ever since the first importation from Spain in the middle of the eighteenth century. Afterwards importations were made from merino flocks that had been bred in France. These sheep have been bred to meet varying conditions and requirements, so that now three types can be differentiated: (1) Tuchwollschaf, with extra fine cloth wool (there are various gradations both in length and fineness of wool grown on these sheep); (2) Stoffwollschaf, the wool of which possesses the waviness required for extra fine cloth but is long enough for the carding machine; (3) Kammwoolschaf (carding wool), which can be subdivided into three types—(*a*) those especially bred for the excellence of their fleece, (*b*) those where wool and mutton production are equally considered, and (*c*) those chiefly bred for weight of carcass.

The English breeds of sheep were imported into Germany about the middle of the last century as a result of the growing importance of meat production and the decrease in the price of wool. The "downs" have been found best suited to meet the requirements of Germany, except in a few districts in the northwest. About a fourth of all German sheep are of the English mutton type.

Table 87 gives the names, district in which the breed is found, and the purpose for which each of the leading breeds is adapted.

TABLE 87.—*Sheep: Breeds in the German Empire, 1912*

Name	Manner bred	District	Purposes
German merinos:			
Merino (Tuchwollschaf).	Large flocks, owned privately.	East and northeast Germany	Extra fine cloth wool.
Merino (Stoffwollschaf).	Same as above	Central Germany, Saxony to Mecklenburg, Pomerania, Hanover, and Silesia.	High wool production.
Merino (Kammwoolschaf).	Private breeders	Northeast Germany, extending to central regions.	Type A high wool production; type B, wool and mutton; type C, mutton.
English sheep:			
Shropshire	do	North German plain, Silesia, Pomerania, Mecklenburg, Saxony, and Hanover.	Early maturing meat breed.
Hamshire	do	Same as above	Do.
Oxford	do	Mecklenburg, Hanover, Oldenburg, and Friesland.	Do.
Native sheep:			
Franken	do	Bavaria: Middle, Lower, and Upper Franken, Thuringia, Wurttemberg, and Baden.	Strong, coarse wool; producing meat of excellent quality.
Wurttemberg bastard (merino and Franken).	do	Wurttemberg	Fine wool, good quality of mutton.
Rhön	do	Rhön Mountains, Lower Franken, Meiningen, and Hesse.	Excellent meat and fair amount of wool.
East Friesland milk	do	East Friesland, Oldenburg, Schleswig-Holstein.	Milk and meat. Produces about 1,000 to 1,400 pounds of milk (5 to 6 per cent butterfat) in year.

Deutsche Landwirtschafts-Gesellschaft. Berlin.

PRE-WAR SHEEP SITUATION

During the 30-year period preceding the war there was a great decrease in the numbers of sheep held on German farms, which in 1883 maintained 19,190,000 head, or 424 head per 1,000 inhabitants, as compared with 5,521,000, or 85 head per 1,000 inhabitants, in 1913. This great decrease is attributable directly to the expansion of wool and mutton production in Australia and in North and South America during this period. The production of cereal and other vegetable foodstuffs had become so profitable in Germany that increased areas were put into field crops, especially on the large estates in the eastern provinces, where the sugar-beet and potato industries grew to such large proportions.

EFFECT OF VERSAILLES TREATY ON SHEEP SITUATION

Of Germany's total number of sheep in 1913, 9.6 per cent, was found within the boundaries of the territories that later were ceded to neighboring countries under the terms of the Versailles treaty. Before the war, according to the enumeration of 1913, there were 5,521,000 sheep in the Empire, or 85 head per 1,000 inhabitants. Of this number 4,988,000, or 86 head per 1,000 inhabitants, were found within the present boundaries of the Republic, so that although within the ceded territories, including the Saar, there were some 533,000 head, the treaty of peace effected an actual increase in the density of sheep, as shown in Table 88.

The net effect of the Versailles treaty upon the sheep situation was an economic gain of about 1.2 per cent.

The statistical analysis of the pre-war sheep situation in the ceded districts and in the territory now composing the Republic of Germany appears in Table 88.

TABLE 88.—*Sheep: Number in the districts which composed the former German Empire, 1913*

Districts	Total number	Per thousand inhabitants
	Thousands	*Number*
Germany, 1923 boundaries	4,988	86
Saar district:		
Rhine Province	2	3
Bavaria	1	12
Areas ceded:		
From East Prussia—		
To Memel	14	99
To Poland	5	202
From West Prussia—		
To Danzig Free State	7	21
To Poland	204	211
From Posen to Poland	231	119
From Upper Silesia—		
To Poland	1	1
To Czechoslovakia	0	0
From Lower Silesia to Poland	5	190
From Schleswig-Holstein to Denmark	18	108
From Rhine Province to Belgium	1	17
Alsace-Lorraine to France	44	23
Total for areas ceded	530	82
Total Empire	5,521	85
Per cent in ceded districts and Saar	9.7	

See Table 54 for sources.

DESTINATION OF THE SHEEP EXPORTED FROM GERMANY, 1909–1913

Before the war Germany produced a small net surplus of sheep exporting an average of 19,500 more animals than imported. These sheep went chiefly to Switzerland (22,000) and Belgium (4,000), with smaller numbers to France and Great Britain. (See Table 89.) A few thousand sheep were imported from Austria-Hungary either in transit to Switzerland or for local consumption in the southeast.

TABLE 89.—*Sheep: Foreign trade*[1] *of the German Republic, 1921–22 to 1923–24, compared with that of the Empire, 1909–10 to 1913–14*

Country	Year beginning July 1			
	Average, 1909–1913	1921	1922	1923
	Number	*Number*	*Number*	*Number*
Austria	+6,272	+302	(2)	
Hungary		+3,614	(2)	
Memel		+2,412	+477	
Czechoslovakia		+1,578	(2)	
Denmark	+453	−4	(2)	
France	−54	(2)	(2)	
Great Britain	−975	(2)	(2)	
Belgium	−3,676	(2)	(2)	
Danzig		+5	(2)	
Saar district		−351	(2)	
Switzerland	−21,913	−3,761	−1,294	
Other countries	+391	−453	−326	
Total	−19,502	+3,342	−1,143	[3] −2,945

Germany, Statistisches Reichsamt (formerly Kaiserliches Statistisches Amt), Monataliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.
[3] Not available by countries.

POSTWAR SHEEP SITUATION

During the war and the years that have followed the flocks of Germany have increased, 11.6 per cent in 1922, 17.5 per cent in 1923, and 14.6 per cent of pre-war in 1924. There are to-day more sheep within the boundaries of the German Republic than there were in the former Empire just preceding the war. (Table 90.)

TABLE 90.—*Sheep: Number in Germany in 1922–24 as compared with 1913*[1]

Item	Unit	Boundaries of 1923			
		1913	1922	[2] 1923	1924
Total number	Thousand	4,988	5,566	5,859	5,717
Increase above pre-war	do		578	871	729
Percentage of increase	Per cent		11.6	17.5	14.6
Per 1,000 inhabitants [3]	Number	86	90	94	91

[1] Census as of Dec. 1.
[2] On Oct. 1, 1923, the number of sheep was reported at 6,105,000. Subtracting from this number the slaughterings reported during October and November gives the number on Dec. 1 as above.
[3] For populations see Table 19.

This increase in sheep is a natural sequence of the decreased acreage of cereals. Especially on the large estates many acres of marginal lands formerly sown to rye are now left to grow wild grass, forming excellent pasturage for sheep. The high price of wool makes

it very profitable to produce sheep, as they require but little care in addition to the wild forage of the abandoned cereal areas. It is probable that when it again becomes profitable to produce cereals in Germany these wild-grass areas will be again put under the plow and the number of sheep will be reduced to the capacity of the permanent meadows and pastures, as was the case before the war.

GERMANY'S POSTWAR FOREIGN TRADE IN SHEEP AND MUTTON

During the fiscal year 1921–22 Germany's sheep imports from Hungary, Memel, and Czechoslovakia exceeded exports to Switzerland and other western neighbors, but during 1923 and 1924 there has been a small net surplus for export, as shown in Table 89.

Germany's imports of mutton before the war about equaled her exports of live animals, averaging around 650,000 pounds. Australia, Denmark, and the Netherlands were the leading sources of these importations, as shown in Table 91.

TABLE 91.—*Mutton, fresh and prepared: Foreign trade of Germany, average 1909–1913*

Country	Imports (+)	Exports (−)	Net imports (+); net exports (−)
	Pounds	*Pounds*	*Pounds*
Australia	254,411		+254,411
Denmark	296,739		+296,739
Netherlands	179,234		+179,234
Austria-Hungary	58,642	20,503	+38,139
Switzerland	6,834	1,984	+4,850
Russia	3,307		+3,307
Helgoland		2,866	−2,866
France	8,378	28,439	−20,061
Dutch East India		20,723	−20,723
Rumania		65,697	−65,697
Other countries	66,799	84,657	−17,858
Total	+874,344	−224,869	+649,475

Germany, Kaiserliches Statistisches Amt., Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

Since the war mutton importations have increased in spite of the per capita increase in the number of live sheep within the boundaries of the Republic. (Table 92.) During 1922 and 1923 these importations have been about three times those before the war, and in 1924 they have risen to about five times the mutton imported before the war.

TABLE 92.—*Mutton, fresh, prepared and frozen: Foreign trade*[1] *of Germany, 1921–22 to 1923–24*

Country	Years beginning July 1		
	1921	1922	1923
	Pounds	*Pounds*	*Pounds*
Great Britain	+1,301,375	+164,463	+152,999
Argentina	+294,094	+1,160,281	+2,707,910
Other South American countries	+1,122,141	(2)	(2)
United States	+23,810	+280,425	+297,621
Other countries	+122,576	+596,344	+628,091
Total	+2,863,996	+2,2031,51	+3,786,621

Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands.

[1] Net imports are indicated by (+) and net exports by (−).
[2] If any, included in other countries.

THE GERMAN MARKET FOR AMERICAN AGRICULTURAL PRODUCTS [12]

ECONOMIC CHANGES IN GERMANY

In the 25 years before the war Germany passed through a period of tremendous industrial development. During this period the population of its industrial cities and the number of factory workers were trebled, its railway traffic almost quadrupled, and its bank deposits increased to seven times the amount at the beginning of the period.

In the same period the agricultural population remained practically stationary, although the application of improved methods greatly increased production. On the whole, however, Germany became increasingly dependent on foreign sources of supply. Germany became a large importer, not only of food products but of raw materials to be worked up in its mills for export to other countries. Since the United States produced a surplus of these raw materials and foodstuffs, Germany became, next to the United Kingdom, our best market for agricultural products.

As a result of the war, German industrial life has been thrown into confusion. By the loss and occupation of its chief industrial centers and the requisitioning of its coal and ore for reparations in kind it has been impossible in seven years for German factories to reach former standards of production or efficiency. Furthermore, foreign markets for manufactured products lost during the war have not all been regained.

German agriculture has undergone a great setback. It has not suffered as much as German industry, although the soils have been considerably exhausted by exploitation during and since the war. An increased use of fertilizers would probably eventually restore these soils to their former high productivity.

The German markets for different American agricultural products have been variously affected by these changed economic conditions. The German people have been impoverished and their purchasing power as a whole diminished, but there are certain necessities which they must have, even at the sacrifice of other things formerly deemed important. It is therefore necessary to analyze this trade situation more in detail before making any broad generalizations.

AMERICAN TRADE WITH GERMANY

The visible balance of trade between the United States and Germany has been and still is normally favorable to the United States, as indicated by Table 93.

TABLE 93.—*Trade of the United States with Germany (all commodities)*

Year ended June 30—	Imports from Germany	Exports to Germany	Balance of exports	Year ended June 30—	Imports from Germany	Exports to Germany	Balance of exports
	Dollars	*Dollars*	*Dollars*		*Dollars*	*Dollars*	*Dollars*
1910	168, 805, 137	249, 555, 926	80, 750, 789	1921	90, 773, 014	381, 869, 349	291, 096, 335
1911	163, 242, 560	287, 495, 814	124, 253, 254	1922	95, 592, 004	350, 495, 269	254, 903, 265
1912	171, 380, 380	306, 959, 021	135, 578, 641	1923	142, 885, 762	293, 132, 434	150, 246, 672
1913	188, 963, 071	331, 684, 212	142, 721, 141	1924	146, 816, 067	378, 350, 363	231, 534, 296
1914	189, 919, 136	344, 794, 276	154, 875, 140	1925	144, 764, 970	464, 058, 347	319, 293, 377
1920	45, 085, 975	202, 176, 079	157, 090, 104				

Compiled from the following publications of the U. S. Bureau of Foreign and Domestic Commerce, Washington, D. C.: Foreign Commerce and Navigation of the United States, June 30, 1914, 1915, p. xii; Monthly Summary of Foreign Commerce of the United States, June, 1920, 1921, 1922, 1923, 1924, and 1925.

[12] This section was prepared by G. B. L. Arner, agricultural statistician, Bureau of Agricultural Economics.

It would appear from these figures that by 1923 there was a relatively close approximation to the pre-war trade relations between the two countries. In pre-war years, however, although Germany had an adverse visible balance of trade in its commerce with all other nations, it enjoyed an invisible income from foreign investments, tourist expenditures, emigrant remittances, etc., which left a net favorable balance of payments, so that there was usually a material net importation of gold. Since the war, however, the interest from foreign investments and the tourist expenditures have been greatly reduced, so that with an adverse visible balance of trade Germany is becoming to an increasing extent a debtor nation. Furthermore, in considering only the visible balance of trade, the relation between general prices in pre-war and postwar years must be considered. In the years ended June 30, 1921–1925, the trade between the two countries, while approximately the same as before the war in terms of dollars, was smaller in volume and in the purchasing power of the proceeds than in any of the five years immediately preceding the war.

AGRICULTURAL EXPORTS TO GERMANY

American exports to Germany have always been predominantly agricultural. Table 94 shows the export value in the years beginning July 1, 1909–1913, 1921, 1922, 1923, and 1924 of the 12 most important agricultural exports to Germany, amounting in 1923–24 to nearly 75 per cent of our total exports to that country.

TABLE 94.—*Value of Exports of 12 principal agricultural products, United States to Germany*

Commodity	Year beginning July 1				
	Average 1909–1913	1921	1922	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Cotton, raw	154,454,688	130,841,050	118,436,466	198,787,795	227,182,818
Lard	15,683,461	30,233,767	39,495,719	41,545,284	38,516,237
Bacon	148,561	5,959,577	8,608,748	9,612,105	3,546,646
Oleo oil [1]	2,375,485	1,598,680	1,580,071	1,315,436	2,583,957
Milk, condensed and evaporated	31	4,774,050	1,565,068	4,380,156	3,960,554
Wheat	6,087,881	31,507,603	10,514,527	2,209,905	11,847,632
Wheat flour	990,535	8,543,188	5,629,680	7,225,117	14,246,332
Rye	65,084	6,364,324	15,774,787	3,716,239	10,904,124
Corn	3,245,265	18,939,147	9,663,437	640,681	35,429
Barley	913,716	3,200	336,953	23,201	7,943,802
Cottonseed oil, cake, and meal	4,447,827	2,511,435	2,914,365	864,875	4,064,627
Tobacco	4,537,348	4,869,472	4,393,668	8,157,966	4,245,662
Total	192,949,882	246,145,493	218,913,489	278,478,760	329,077,820
All other commodities	111,147,967	104,349,776	74,218,945	99,871,603	134,980,527

Compiled from the following publications of the United States Bureau of Foreign and Domestic Commerce, Washington, D. C.: Foreign Commerce and Navigation of the United States, 1910–1914; Monthly Summary of Foreign Commerce of the United States, June, 1922–1925.

[1] Includes neutral lard in 1909–10.

This is not a complete list of the agricultural exports to Germany, but it is sufficient to show the significance of the German market in American agriculture.

GERMAN IMPORTS OF AMERICAN AGRICULTURAL PRODUCTS

In measuring the importance of the German market it is perhaps more significant to consider German imports of American agricultural products rather than our exports to Germany. (Table 95.) The German import figures will not agree with American export figures for many reasons, one of which is that exports do not always actually go to the countries to which they are originally consigned; another reason is the difference between the time of shipment and that of arrival. For this purpose 12 important commodities imported into Germany from the United States in the calendar years 1913, 1921, 1922, 1923, and 1924 are chosen for consideration.

TABLE 95.—*German imports of 12 American agricultural products*

Commodity	Unit	1913	1921	1922	1923	1924
Cotton (500 pounds)	Bale	1,962,204	1,215,176	1,055,537	746,060	1,085,841
Lard	Pound	223,065,837	297,360,857	126,305,943	242,911,867	248,410,360
Bacon	do	2,306,012	103,345,034	54,796,435	78,933,719	53,440,827
Oleo oil	do	43,282,912	23,695,041	23,009,410	12,575,479	18,903,563
Pork, fresh or simply prepared	do	160,936	51,426,704	15,583,876	16,228,722	25,085,923
Wheat	Bushel	36,941,706	60,801,802	26,546,031	9,069,069	18,389,325
Wheat flour	Barrel	74,349	211,620	106,559	1,003,628	3,561,756
Rye	Bushel	769,251	12,128,769	19,080,166	23,323,009	9,593,730
Corn	do	6,755,588	19,897,453	35,068,861	5,961,823	1,955,291
Barley	do	8,633,090	1,568,521	2,051,965	2,123,945	8,558,666
Oil cake and meal	Pound	474,509,286	11,338,258	17,790,681	1,503,978	18,689,276
Tobacco, leaf	do	16,117,831	20,937,086	15,979,602	21,675,186	30,234,105

Germany, Statistisches Reichsamt, Monatliche Nachweise über den Auswärtigen Handel Deutschlands, December, 1913, 1921 to 1924.

On account of fluctuations in exchange the import values of these commodities, recorded in marks in German statistics, are not very significant. To arrive at comparable values it is better to multiply these quantities by the average export prices as shown in the United States export statistics. This process gives results as shown in Table 96.

TABLE 96.—*German imports of 12 American agricultural products, in United States currency*

Commodity	1913	1921	1922	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Cotton	115,760,225	86,085,498	105,738,418	106,714,184	145,303,985
Lard	24,983,374	38,062,190	14,777,795	29,878,160	33,038,578
Bacon	288,251	13,951,580	6,246,794	9,156,311	6,680,103
Oleo oil	5,107,384	2,630,150	2,369,969	1,471,331	2,627,595
Pork, fresh and simply prepared	20,278	8,279,699	1,870,065	2,385,622	2,985,225
Wheat	36,461,464	100,748,586	33,341,815	10,574,534	26,278,345
Wheat flour	375,537	1,454,253	562,951	5,061,296	20,569,141
Rye	535,399	20,594,650	19,022,926	22,016,920	10,332,447
Corn	3,816,907	16,037,347	25,214,511	5,079,473	1,884,901
Barley	5,024,458	1,312,852	1,526,662	1,618,446	8,704,163
Oil cake and meal	6,643,130	226,765	373,604	33,088	386,868
Tobacco, leaf	2,046,965	3,998,983	2,364,981	3,142,902	4,897,925
Total	201,063,372	293,382,553	213,410,491	197,132,267	263,689,276

Table 98 gives a more accurate picture of the position of American agricultural products in German markets than does Table 96. It will be noted that German imports of American grain are generally

higher than our exports of grain to Germany. This is explained by the heavy transshipments to Germany of grain originally consigned to the United Kingdom or the Netherlands. Oil-cake imports, on the other hand, are much lower than corresponding American exports, probably on account of the reshipment to Denmark of oil cake originally consigned to Germany. These figures appear more significant when combined in groups, as in Table 97.

TABLE 97.—*German imports of American agricultural products, in United States currency*

Commodity group	1913	1921	1922	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Cotton	115,760,225	86,085,498	105,738,418	106,714,184	145,303,985
Meats and fats	30,399,287	62,923,619	25,264,623	42,891,424	45,331,501
Breadstuffs	37,372,400	122,797,489	52,927,692	37,652,750	57,179,933
Feedstuffs	15,484,495	17,576,964	27,114,777	6,731,007	10,975,932
Tobacco	2,046,965	3,998,983	2,364,981	3,142,902	4,897,925
Total	201,063,372	293,382,553	213,410,491	197,132,267	263,689,276

These values may be more readily compared in the form of index numbers, as shown in Table 98.

TABLE 98.—*German imports of American agricultural products, index numbers of value, base 1913*

Commodity group	1913	1921	1922	1923	1924
Cotton	100	74	91	92	126
Meats and fats	100	207	83	141	149
Breadstuffs	100	329	142	101	153
Feedstuffs	100	114	175	43	71
Tobacco	100	195	116	154	239
Total	100	146	106	98	131
Total divided by United States Department of Labor wholesale price index	100	99	71	64	87

It thus appears that although German imports of these important commodities have exceeded the pre-war level in gross value during three years of the last four, the proceeds of our sales to Germany, expressed in terms of purchasing power, in 1924 were only 87 per cent of our sales to Germany in 1913.

To compare German imports of American agricultural commodities on the basis of volume, we may multiply the quantities of each commodity imported in each year by the average unit export price for 1913. The products, combined in groups, are shown in Table 99.

TABLE 99.—*German imports of American agricultural products, value at 1913 export prices*

Commodity group	1913	1921	1922	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Cotton	115,760,225	71,689,308	62,271,405	44,013,810	64,059,190
Meats and fats	30,399,287	55,498,325	25,674,498	40,601,570	39,893,509
Breadstuffs	37,372,400	69,521,894	40,018,959	30,253,310	42,817,930
Feedstuffs	15,484,495	12,313,676	21,257,220	4,625,620	6,347,532
Tobacco	2,046,965	2,659,010	2,029,409	2,752,749	3,839,731
Total	201,063,372	211,682,213	151,251,491	122,247,059	156,957,892

These figures may be expressed in the form of index numbers of volume, since the price is constant, as in table 100.

TABLE 100.—*German imports of American agricultural products, index numbers of volume, base 1913*

Commodity group	1913	1921	1922	1923	1924
Cotton	100	62	54	38	55
Meats and fats	100	183	84	134	131
Breadstuffs	100	186	107	81	115
Feedstuffs	100	80	137	30	41
Tobacco	100	130	99	134	188
Total	100	105	75	61	78
Total, less cotton	100	164	104	92	109

The heavy imports of these commodities in 1921 were followed by a drop in 1922 to 75 per cent of the volume in 1913, with a further decline in 1923. In 1924, because of increased imports of cotton, wheat, and wheat flour, the index number rose again to 78. Since cotton forms so large a part of these imports the index number of imports of other commodities is given separately, showing that the volume of German imports of other American agricultural commodities has in the past three years been practically equal to that of 1913.

THE GERMAN MARKETS FOR SPECIFIC COMMODITIES

It appears from the above tables that the war and postwar economic conditions have affected the German markets for different classes of commodities in different ways. It is therefore necessary in an analysis of the situation to consider each commodity group separately in arriving at conclusions regarding future German market conditions.

COTTON

Previous to the war Germany was a large importer of raw cotton and an exporter of cotton goods. The number of spindles in Germany on March 1, 1914, was 11,404,944, according to estimates by the International Federation of Master Cotton Spinners. As a result of the war the number of spindles was reduced to 9,400,000 on February 1, 1920, chiefly by the loss of 2,000,000 spindles, or 17.5 per cent of the total, in the ceded territory of Alsace-Lorraine. This loss of spindles is proportionately greater than the loss of population, which in the same period was approximately 10 per cent. It appears from Tables 96, 97, and 100 that in 1924 Germany paid in actual gold value $30,000,000 more for cotton than in 1913, but that this sum paid for only 55 per cent of the quantity used in 1913.

In 1913 Germany obtained 77.3 per cent of her cotton from the United States; in 1923, 77 per cent; and in 1924, 79.2 per cent; so that the source of supply has not been materially shifted.

The decline of the German cotton-manufacturing industry, aside from the loss of spindles to France as noted above, is owing both to a decreased domestic demand resulting from the impoverishment of the people and to the loss of an important export trade. Germany since the war has become a net importer of cotton goods, and it is significant that the chief source of supply next to the United Kingdom is Alsace-Lorraine.

In the future Germany will undoubtedly continue to offer an important market for American raw cotton, although it is probable that the quantity of German purchases will be below the pre-war level for several years at least. The German people will probably return in a few years to their normal consumption of cotton goods, which are likely to be supplied by German mills largely from American raw cotton. It is not at all certain that the export trade will return to its pre-war volume; but, since the United States remains the world's chief source of raw cotton for which the aggregate demand is as great as ever, the decrease in German demand merely means that there is a compensating strengthening of demand in countries such as France and Japan, in which the cotton industry has expanded since the war.

MEATS AND FATS

The German market for American pork products is better than before the war. Even during the period of greatest economic demoralization in Germany, imports of pork products were exceptionally heavy. This apparently paradoxical situation arose from the fact that fats were necessities of life and American pork fats were the cheapest fats obtainable. The German hog population diminished greatly during the war, and the scarcity of feedstuffs has made it difficult to fatten hogs to the same weights as before the war. Butter has been scarce and too expensive for the average family, so the cheaper American lard has been used as a substitute. With the economic revival which followed the stabilization of the currency in December, 1923, and the subsequent acceptance of the Dawes plan, there was an immediate resumption of imports of butter from Denmark, which soon rose to the pre-war level. It seems probable that if economic improvement continues, more butter, margarine, kettle-rendered lard, and domestic pork will be used and consequently that the per capita consumption of American bacon and refined lard will decline toward its pre-war level. This will still mean an important market for lard, but there is little chance for a continuance of an important trade in American bacon.

Although the German market for American meats and fats has been relatively good in recent years, it should be noted that in relation to the purchasing power of the dollars received for these export products the trade is really no better than in 1913. The value of German imports of American pork products in 1924 was 149 per cent of the value of the same products in 1913, while the index number of wholesale prices in 1924 was 150.

BREADSTUFFS

German imports of bread grains and flour from the United States in the calendar year 1923 were approximately equal in value to the corresponding imports for 1913, but the volume of these imports was somewhat smaller. In 1924, because of a shortage in the German wheat and rye crops, together with a good crop of wheat in the United States, there was a sharp increase both in value and volume. Total imports of wheat in 1925 will probably be somewhat heavier than usual. In the five months January to May, imports of wheat amounted to 20,100,000 bushels, as compared with 4,800,000 bushels in the same months of 1924. Of this, 11,700,000 bushels were imported from the United States and 5,300,000 bushels from Argentina.

It is apparent from the experience of several seasons that the German consumption of bread cereals is relatively elastic. A grain shortage leads to longer milling and greater substitution, so that the deficit is never entirely made up by imports. For example, a total production of wheat and rye in 1921 of 376,000,000 bushels was followed by net imports of 74,000,000 bushels. In 1922, with a bread grain production 98,000,000 bushels smaller, net imports were only 10,000,000 bushels larger. In 1923, with a large crop of 369,000,000 bushels with low world prices, Germany was still able to import 50,000,000 bushels of wheat and rye. In 1924 again there was a small crop of 315,000,000 bushels with high world prices. Imports of wheat and rye for 11 months ended May 31, 1925, amounted to 87,000,000 bushels, indicating that the total imports for the season will be but slightly in excess of 90,000,000 bushels.

Germany is still far below its pre-war standard of bread-grain consumption, however; and, if the country returns to pre-war conditions of industrial prosperity, it is reasonable to suppose that the consumption of bread grains will increase.

TOBACCO

The German market for American leaf tobacco remained steady throughout the whole period of depression and was exceptionally good in the early months of 1924. In 1923 the volume of imports of American tobacco was 34 per cent and in 1924 it was 88 per cent greater than in 1913. Imports of American tobacco in 1923 constituted nearly 16 per cent of the total tobacco imports, as compared with 9 per cent in 1913. But in the first five months of 1925 imports of American tobacco have been much smaller than in the corresponding months of 1924, with only a slight reduction in total imports. Much of the American tobacco imported into Germany is for manufacture and export.

FEEDSTUFFS

Since the numbers of all classes of livestock in Germany are smaller than in the years immediately preceding the war, Germany is importing smaller quantities of feed stuffs than in pre-war years. But of such feedstuffs as have been imported since the close of the war the United States has replaced Russia as the most important source of supply. In 1920, 1921, and 1922 Germany imported large quantities of American corn, but this was used largely in the manufacture of industrial alcohol because of the restrictions imposed by the Government on the use of potatoes for this purpose. Since the lifting of these restrictions, corn imports have been of little importance, as few German farmers are familiar with the use of corn as a feedstuff. Barley imports from the United States have usually been unimportant, but following the short German barley crop of 1924 nearly 8,000,000 bushels of barley were exported from the United States to Germany in the year ended June 30, 1925. Oil cake and oil-cake meal was also exported from the United States to Germany in unusually large quantities in the year ended June 30, 1925, but the greater part was reexported, chiefly to Denmark.

SUPPLEMENTARY TABLES

The data for production, acreage, and yields per acre in Tables 101, 102, and 103 are the yearly figures from which averages in the foregoing text have been calculated.

Tables 104 and 105 give the numbers of livestock and the utilization of land in the Empire of Germany as far as available.

TABLE 101.—*Cereals and potatoes: Production in Germany, 1878–1924*

[Thousands of bushels—000 omitted]

Year	Rye	Wheat	Oats	Summer barley	Potatoes	Year	Rye	Wheat	Oats	Summer barley	Potatoes
1878	273, 134	96, 084	348, 258	106, 969	868, 576	1902	373, 758	143, 299	514, 430	142, 380	1, 596, 939
1879	219, 712	84, 032	294, 796	94, 660	696, 323	1903	391, 356	130, 623	542, 400	152, 669	1, 576, 362
1880	195, 698	86, 457	292, 316	98, 748	716, 973	1904	396, 080	139, 808	477, 847	135, 399	1, 333, 305
1881	215, 224	75, 912	259, 798	95, 533	939, 380	1905	378, 207	135, 950	451, 047	134, 205	1, 775, 548
1882	252, 505	94, 136	311, 606	103, 846	665, 936	1906	378, 955	144, 769	580, 843	142, 886	1, 577, 648
1883	221, 444	86, 678	256, 974	98, 059	917, 775	1907	384, 152	127, 830	630, 309	160, 660	1, 673, 218
1884	215, 382	91, 381	292, 867	102, 606	884, 632	1908	422, 693	138, 449	530, 137	140, 543	1, 702, 796
1885	230, 026	95, 827	300, 239	104, 030	1, 029, 438	1909	446, 746	138, 008	628, 724	160, 568	1, 716, 134
1886	239, 868	97, 958	334, 548	107, 336	923, 838	1910	413, 802	141, 866	544, 261	133, 332	1, 597, 159
1887	251, 009	104, 020	296, 312	101, 320	928, 614	1911	427, 796	149, 398	530, 757	145, 136	1, 263, 015
1888	217, 429	92, 997	320, 218	103, 846	805, 083	1912	456, 588	160, 238	586, 975	159, 925	1, 844, 846
1889	211, 130	87, 155	289, 147	89, 011	977, 520	1913	481, 169	171, 075	669, 231	168, 709	1, 988, 591
1890	231, 011	104, 020	338, 544	104, 856	856, 891	1914	410, 478	145, 944	622, 674	144, 125	1, 674, 377
1891	188, 296	85, 759	363, 690	115, 604	681, 883	1915	360, 310	141, 676	412, 400	114, 077	1, 983, 161
1892	268, 804	116, 219	326, 763	111, 195	1, 028, 409	1916	351, 826	113, 393	484, 007	128, 450	921, 317
1893	293, 684	110, 046	223, 354	89, 424	1, 186, 001	1917	275, 696	83, 945	256, 041	85, 644	1, 281, 692
1894	278, 528	110, 671	361, 692	111, 746	1, 067, 357	1918 [1]	315, 301	85, 865	301, 839	93, 504	909, 183
1895	259, 670	103, 175	361, 899	110, 781	1, 167, 960	1919 [1]	240, 161	79, 701	309, 587	87, 741	789, 210
1896	284, 708	110, 524	342, 264	106, 418	1, 075, 771	1920 [1]	194, 255	82, 583	332, 490	82, 344	1, 024, 301
1897	272, 937	107, 033	333, 515	102, 973	1, 094, 988	1921 [1]	267, 648	107, 798	344, 812	89, 056	960, 889
1898	296, 558	120, 996	398, 275	115, 465	1, 168, 144	1922 [1]	206, 033	71, 926	276, 643	73, 837	1, 494, 181
1899	341, 556	141, 388	474, 195	137, 053	1, 414, 104	1923 [1]	263, 037	106, 448	420, 731 [2]	108, 446	1, 197, 095
1900	336, 635	141, 131	488, 594	137, 879	1, 491, 228	1924 [1]	225, 573	89, 199	389, 525 [2]	110, 226	1, 337, 540
1901	321, 360	91, 822	485, 701	152, 531	1, 788, 923						

1878–1912: Converted from revised rounded figures given in Die Deutsche Landwirtschaft, prepared by Kaiserlichen Statistischen Amt. These figures may not agree with yearly data appearing in Vierteljahrshefte for corresponding years.
1913–1922: Germany, Statistisches Reichsamt, Vierteljahrshefte zur Statistik des Deutschen Reichs.
1923 and 1924: Deutscher Reichsanzeiger und Preussischer Staatsanzeiger.

[1] New boundaries beginning 1918; however, the boundaries differ from year to year between 1918 and 1924.
[2] Includes winter barley.

TABLE 102.—*Cereals and potatoes: Acreage in Germany, 1878–1924*

[Thousands of acres—000 omitted]

Year	Rye	Wheat	Oats	Summer barley	Potatoes	Year	Rye	Wheat	Oats	Summer barley	Potatoes
1878	14, 712	4, 495	9, 271	4, 010	6, 815	1902	15, 209	4, 725	10, 269	4, 062	8, 009
1879	14, 688	4, 500	9, 281	4, 023	6, 827	1903	14, 858	4, 468	10, 601	4, 203	8, 001
1880	14, 668	4, 500	9, 274	4, 020	6, 840	1904	15, 071	4, 739	10, 353	4, 020	8, 125
1881	14, 651	4, 505	9, 279	4, 043	6, 850	1905	15, 187	4, 762	10, 334	4, 035	8, 196
1882	14, 683	4, 515	9, 276	4, 040	6, 845	1906	15, 078	4, 784	10, 433	4, 065	8, 159
1883	14, 399	4, 759	9, 323	4, 334	7, 193	1907	14, 932	4, 317	10, 816	4, 206	8, 149
1884	14, 448	4, 754	9, 335	4, 295	7, 198	1908	15, 123	4, 658	10, 564	4, 025	8, 137
1885	14, 436	4, 742	9, 358	4, 304	7, 218	1909	15, 150	4, 524	10, 650	4, 067	8, 214
1886	14, 428	4, 737	9, 407	4, 280	7, 205	1910	15, 288	4, 801	10, 598	3, 879	8, 144
1887	14, 436	4, 744	9, 415	4, 277	7, 210	1911	15, 162	4, 878	10, 694	3, 917	8, 209
1888	14, 366	4, 776	9, 471	4, 258	7, 215	1912	15, 488	4, 759	10, 840	3, 929	8, 282
1889	14, 337	4, 833	9, 605	4, 164	7, 210	1913	15, 849	4, 878	10, 967	4, 087	8, 453
1890	14, 381	4, 843	9, 647	4, 112	7, 181	1914	15, 565	4, 932	10, 843	3, 909	8, 367
1891	13, 541	4, 658	10, 267	4, 465	7, 223	1915	15, 843	4, 950	11, 404	4, 002	8, 827
1892	14, 033	4, 883	9, 854	4, 176	7, 240	1916	14, 823	4, 159	8, 935	3, 766	6, 914
1893	14, 856	5, 051	9, 654	4, 020	7, 504	1917	13, 715	3, 751	8, 808	3, 610	6, 293
1894	14, 937	4, 895	9, 679	4, 023	7, 475	1918 [1]	14, 199	3, 375	7, 510	2, 997	5, 720
1895	14, 564	4, 772	9, 956	4, 178	7, 537	1919 [1]	10, 880	4, 030	7, 396	2, 781	5, 389
1896	14, 782	4, 762	9, 835	4, 141	7, 544	1920 [1]	10, 589	3, 399	7, 940	2, 949	5, 986
1897	14, 744	4, 747	9, 882	4, 117	7, 581	1921 [1]	10, 539	3, 561	7, 814	2, 808	6, 541
1898	14, 690	4, 865	9, 877	4, 102	7, 613	1922 [1]	10, 236	3, 395	7, 912	2, 846	6, 725
1899	14, 507	4, 984	9, 884	4, 055	7, 739	1923 [1]	10, 789	3, 653	8, 265 [2]	3, 216	6, 738
1900	14, 715	5, 063	10, 188	4, 127	7, 954	1924 [1]	10, 525	3, 624	8, 712 [2]	3, 571	6, 821
1901	14, 361	3, 907	10, 900	4, 594	8, 201						

1878–1912: Converted from revised rounded figures given in Die Deutsche Landwirtschaft, prepared by Kaiserlichen Statistischen Amt. These figures may not agree with yearly data appearing in Vierteljahrshefte for corresponding years.
1913–1922: Germany, Statistisches Reichsamt, Vierteljahrshefte zur Statistik des Deutschen Reichs.
1923 and 1924: Deutscher Reichsanzeiger und Preussischer Staatsanzeiger.

[1] New boundaries, beginning 1918; however, the boundaries differ from year to year between 1918 and 1924.
[2] Includes winter barley.

TABLE 103.—*Cereals and potatoes: Average yield per acre in Germany, 1878–1924*

Year	Rye	Wheat	Oats	Summer barley	Potatoes	Year	Rye	Wheat	Oats	Summer barley	Potatoes
	Bush.	*Bush.*	*Bush.*	*Bush.*	*Bush.*		*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
1878	18.6	21.4	37.6	26.7	127.5	1902	24.6	30.3	50.1	35.1	199.4
1879	15.0	18.7	31.8	23.5	102.0	1903	26.3	29.2	51.2	36.3	197.0
1880	13.3	19.2	31.5	24.6	104.8	1904	26.3	29.5	46.2	33.7	164.1
1881	14.7	16.9	28.0	23.6	137.1	1905	24.9	28.5	43.6	33.3	216.6
1882	17.2	20.8	33.6	25.7	97.3	1906	25.1	30.3	55.7	35.2	193.4
1883	15.4	18.2	27.6	22.6	127.6	1907	25.7	29.6	58.3	38.2	205.3
1884	14.9	19.2	31.4	23.9	122.9	1908	28.0	29.7	50.2	34.9	209.3
1885	15.9	20.2	32.1	24.2	142.6	1909	29.5	30.5	59.0	39.5	208.9
1886	16.6	20.7	35.6	25.1	128.2	1910	27.1	29.5	51.4	34.4	196.1
1887	17.4	21.9	31.5	23.7	128.8	1911	28.2	30.6	49.6	37.1	153.9
1888	15.1	19.5	33.8	24.4	111.6	1912	29.5	33.7	54.1	40.7	223.4
1889	14.7	18.0	30.1	21.4	135.6	1913	30.4	35.1	61.0	41.3	235.8
1890	16.1	21.5	35.1	25.5	119.3	1914	26.4	29.6	57.4	36.9	200.1
1891	13.9	18.4	35.4	25.9	94.4	1915	22.7	28.6	36.2	28.5	224.7
1892	19.2	23.8	33.2	26.6	142.0	1916	23.7	27.3	54.2	34.1	133.3
1893	19.8	21.8	23.1	22.2	158.0	1917	20.1	22.4	29.1	23.7	203.7
1894	18.6	22.6	37.4	27.8	142.8	1918 [1]	22.2	25.4	40.2	31.2	158.9
1895	17.8	21.6	36.3	26.5	155.0	1919 [1]	22.1	19.8	41.9	31.6	146.4
1896	19.3	23.2	34.8	25.7	142.6	1920 [1]	18.3	24.3	41.9	27.9	171.1
1897	18.5	22.5	33.7	25.0	144.4	1921 [1]	25.4	30.3	44.1	31.7	146.9
1898	20.2	24.9	40.3	28.1	153.4	1922 [1]	20.1	21.2	35.0	25.9	222.2
1899	23.5	28.4	48.0	33.8	182.7	1923 [1]	24.4	29.1	50.9	[2] 33.7	177.7
1900	22.9	27.9	48.0	33.4	187.5	1924 [1]	21.4	24.6	44.7	[2] 30.9	196.1
1901	22.4	23.5	44.6	33.2	218.1						

[1] New boundaries, beginning 1918; however, the boundaries differ from year to year between 1918 and 1924.
[2] Includes winter barley.

TABLE 104.—*Livestock: Number in Germany, specified years, 1873 to 1924*

[In thousands—000 omitted]

Year and boundary	Horses	Cattle	Swine	Sheep	Goats
Empire:					
1873	3,352	15,777	7,124	24,999	2,320
1882	3,523	15,787	9,206	19,190	2,641
1892	3,836	17,556	12,174	13,590	3,092
1897	4,038	18,491	14,275	10,867	----------
1900	4,195	18,940	16,807	9,693	3,267
1904	4,267	19,332	18,921	7,907	3,330
1907	4,345	20,631	22,147	7,704	3,534
1912 [1]	4,523	20,182	21,924	5,803	3,410
1913 [1]	4,558	20,994	25,659	5,521	3,548
1923 boundary:					
1912 [1]	3,822	17,437	18,877	5,188	2,997
1913 [1]	3,807	18,476	22,533	4,988	3,164
1922 [2]	3,691	16,316	14,678	5,566	4,140
1923 [2]	----------	16,091	15,832	5,859	4,654
1924 [2]	3,890	17,296	16,844	5,717	4,351

Germany, Kaiserliches Statistisches Amt, Die Deutsche Landwirtschaft, Berlin, 1913.

[1] Prepared in the German Statistisches Reichsamt, September, 1923.
[2] For sources, see Table 55.

TABLE 105.—*Utilization of land in the Empire of Germany, 1878 to 1900*

[Thousands of acres—000 omitted]

Classification	1878	1883	1893	1900
Plow and garden lands	64,401	64,684	64,847	64,882
Meadows	14,613	14,587	14,618	14,718
Pastures	11,405	8,463	7,099	6,688
Vineyards	331	332	328	334
Forests and wood lots	34,280	34,368	34,487	34,584
Other woodlands	8,400	11,062	12,175	12,388
Total	133,430	133,496	133,554	133,594

Germany, Kaiserliches Statistisches Amt, Die Deutsche Landwirtschaft, Berlin, 1913.

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