
CHAPTER III. USES OF AGRICULTURE
CENSUS STATISTICS IN BUSINESS
AND RESEARCH

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USES OF AGRICULTURE CENSUS STATISTICS IN BUSINESS AND RESEARCH

Introduction.—In the preceding chapters of the Handbook of the Census of Agriculture are described the Census tabulations and publications and the uses made of the data in the educational field. In this chapter the uses of the Census statistics in business and research are discussed. Believing, with a Chinese philosopher, that a picture is worth a thousand words, the present chapter is largely devoted to illustrations of uses which have been made of Census data from the regular tabulations and from special analyses made for advertising and business concerns and farmer cooperatives. Until recently, the principal uses made of Census material in business were applications, to problems of marketing, of the information already published.

Uses of Census data by marketmen.—The marketmen use Farm Census information for market analysis; the determination of sales areas, sales quotas, farm income, consumers' activities, interstate shipment, supply and demand; in calculating sales potentials for farm machinery, fertilizer, livestock, hardware, household and electrical appliances, and the equipment required for various types of farms, such as milking machines for dairies, spraying machinery for orchards, drinking fountains for hogs and poultry, planting machinery for potatoes, dusting machinery for cotton to combat the boll weevil; and other uses too numerous to mention.

To indicate the range of agricultural information which is covered, it may be well to reiterate that the 1940 Census Farm and Ranch Schedule contained 232 major questions in which provisions were made for reports on every kind of crop and each class of livestock. For example, there were approximately 100 different vegetables reported at the 1940 Census of Agriculture, many of which require special machinery for planting and harvesting, different types of fertilizers, and different types of containers, each of which provides a sales outlet for special equipment.

In addition to the tabulations usually made by the Census Bureau, frequency tabulations showing the magnitude of operations are often made which enable marketmen to determine, with greater precision, the areas where advertising would be most profitable. Two such tabulations of the 1940 Farm Census offer excellent examples. (1) The special report, "Cows Milked and Dairy Products," shows by number of cows milked the number of farms reporting; the number of cows milked; dairy products produced; the sales of milk, butterfat, and butter; and the number of cows kept for milk. (2) Similar tabulations are contained in a special poultry report which gives statistics, by geographic divisions and States, for poultry of all kinds on hand and raised; and, by counties, statistics for chickens on hand, chicken eggs produced, chickens raised, and chickens sold, by number of chickens on hand, and the number of farms reporting chickens and turkeys raised by numbers raised.

Tabulations of this kind are put to many uses. A striking example of the use of the poultry data was that of a retail merchant, selling anthracite coal, who needed to know the production of broilers within a certain area in order to determine whether he would be warranted in purchasing or processing the size and quality of coal to use in brooders in his territory. From the number of chickens raised and the brooder capacity he could check back to the coal required.

Least this be thought trifling, the rationing board had need of very similar information to find out whether two counties in the Del-Mar-Va area should be allowed several times the usual fuel quota because of the extensive use of coal for brooders.

Similar examples of the uses of size-group material, in the cows milked and dairy products reports, are illustrated by manufacturers at the extremes of dairy equipment—one firm manufacturing a churn which was suitable for farms having a cow or two and another firm manufacturing mechanical milking equipment suitable for the largest scale commercial enterprises.

The Rank Releases, showing the 50 or 100 leading counties in acreage and production of major crops and in inventory and production for various classes of livestock, are of great importance to marketmen as indicators of sales potentials and in indicating the cream of the market.

By far the widest commercial uses made of Agricultural Census statistics, however, are those which relate to farm income. It is believed that the rough gross-income figures derived from these reports on farms reporting and value of farm products sold, traded, or used by farm households form the best basis for calculating the amount of money which will be available for sales in farm territory.

While there are other methods of calculating this amount, such as bank clearings, amount of sales, credit reports, etc., very few have the universal basis furnished by the Agriculture Census. It is often said that the Census material, after a few years, is out of date. It should be pointed out that, by the use of crop condition figures and price indexes, these county figures can be carried forward by researchers so that an approximate figure can be furnished without a great deal of difficulty.

While the Census does not calculate the basic index figures, the Department of Agriculture does. At this point it might be well to mention the demarcation between the two fields of endeavor. The Bureau of the Census, through its Division of Agriculture, Department of Commerce, is responsible for the basic figures on crops, livestock, and general farm information every five years. The Department of Agriculture is responsible for estimating the changes on a percentage basis from year to year and converting them into absolute figures by the application of percentages and indexes. Estimates on farm income and other items for a geographic unit smaller than a State are not available, so that it is usually necessary to go back to the Census of Agriculture county figures and work from that source to calculate county income.

One of the most interesting examples of calculating sales quotas which has come to the attention of the Bureau was that of a feed salesman who computed from the minor civil division and county figures the theoretical requirements of feed for the animal units within his territory. He worked out the production of the various grains in that area, calculated the deficiency, and set up the sales quota for his dairy and poultry feed accordingly, with great success.

Uses by trade associations.—Trade associations perform a very useful function in bringing to their members essential statistics published by the Census Bureau with descriptions of the uses which can be made of the statistics—making business forecasts from Census figures relating to trade, conditions, credit, etc.; indicating trade opportunities; and furnishing other similar information. Examples of such uses are presented on succeeding pages. These illustrations include statistical tables, maps, graphs, and calculations of important averages and percentages, all designed to make the material more readily assimilable by members and clients of the associations.

Uses by farm cooperatives.—Farm cooperatives make use of Census statistics in much the same way as trade associations. They make the United States, State, and county farm statistics available to their members and sometimes even the statistics for small areas, such as minor civil divisions.

At the request of the cooperatives, questions relating to cooperative activities were included on the 1940 Farm and Ranch Schedule. These questions cover farmer sales, purchases, and service through cooperatives. Sample charts which were furnished cooperatives by their statistical service accompany this chapter.

Service to individuals.—The question is often asked as to what service the Census of Agriculture renders individual farmers. A large part of statistical service is rendered by the Census through the county agents, each one of whom is furnished the State bulletins, special reports, and releases covering his territory. Many farmers take advantage of this service, while others write direct to the Bureau of the Census regarding such problems as relative yields in various territories, farm income with county averages, new crops, localities producing seed supplies, data needed in selecting new farm locations—i.e. information relating to soil, climate, yields, and markets—livestock or poultry basic developments, tax statistics, land values, etc.

Still other individuals make similar use of Agriculture Census statistics, particularly in the selection and sales of land in new farming territory, as of the new irrigation projects of the West, and the reclamation projects of the South. The statistics of the Agriculture Census, in such cases, are supplemented by the detailed data of the Census of Irrigation and the Census of Drainage, both of which are handled by the Division of Agriculture. These Census Reports also furnish a large amount of technical data needed by governmental agencies, machinery and equipment firms, planning authorities, and engineers and other individuals.

Tabulations for small geographic units.—The county is the smallest unit for which the data of the 1940 Census of Agriculture were published (see a description of the publications in chapter II of this Handbook). A few years ago the county statistics were sufficient to fill the needs of almost everyone, but today all agencies interested in intensive planning, land purchase, and emergency relief demand exact knowledge of smaller geographic units. To meet this need, most of the Census statistics for 1940 were tabulated on the basis of the small geographic unit, which, for convenience, is termed minor civil division or basic tabulation unit of the Agriculture Census. These units vary widely in the different States, both in size and general characteristics, as may be seen from the various designations, as townships, precincts, beats, militia districts, school districts, etc. There are, on the average, about 17 minor civil divisions per county.

The published county totals are the summation of the totals for each of the constituent minor civil divisions. The cost of preparing and printing these data for approximately 50,000 minor civil divisions for the hundreds of items is prohibitive, but, with the cooperation of the Department of Agriculture and the Work Projects Administration, the most important have been transcribed from the machine tabulation sheets. These tables can be obtained by the general public at the cost of the photostats, 35 cents per sheet.

Special tabulations.—If the Census publications do not disclose the data needed for special purposes, the desired information may often be secured by having the Census Bureau make special tabulations of the data which are recorded on the agriculture schedules and on the punch cards. The punch cards may be retabulated or cross tabulated to bring out the desired relationships.

Anyone desiring special tabulations should write the Bureau of the Census stating exactly what is needed. The procedure will be worked out by the statisticians of the Division of Agriculture, and an estimate will be furnished by the Director of the Census specifying the cost of the work and the method of payment. Because of legal requirements it is necessary that such payments be made in advance and in the manner specified by the Bureau of the Census.

Examples of important special jobs of this kind are as follows:

- I. A study of the characteristics of farms by income groups, by geographic divisions (based on a 2-percent sample of individual reports and made in cooperation with U. S. Department of Agriculture). This shows the interrelationship of such factors as age of operator, size of farm, farm equipment, farm facilities, work off farm, and major source of income with the amount of income.
- II. Study of where farmers buy consumer goods—Morrow County, Ohio—influence of roads, type of farm, income, farm value, distance to markets, income by soil types, and numerous other market, sociological, and agricultural data. Special tabulations tying in data from five different sources.
- III. Index of County Buying Power—Morrow County, Ohio.
- IV. A study of the application of farm location to commercial research problems—Morrow County, Ohio.
- V. Measurement of characteristics of different groups of farmers, showing relationship of subscribers of a farm magazine to farmers on adjoining farms, for selected counties.
- VI. A market analysis based on Agriculture Census and other data, by States and counties.
- VII. Farm income, by source of income, by major-source groups, and by income groups, for farms by tenure groups, by geographic divisions and States.
- VIII. Virginia study of farm family income.
- IX. Cotton harvested.—Number of farms reporting, acreage, and production; and value of farm products; by number of bales harvested, by counties.
- X. Farms, farm acreage, and farm values, work off farm, cooperative marketing, and income groups, by color and tenure of operator, by size of farm, for selected counties.
- XI. Farms, farm acreage, and farm values, by income groups, for selected counties in Kentucky.
- XII. Selected characteristics of farms, by major source of income.—Number and value of farms, specified farm expenditures, autos, trucks, and tractors, electricity, and telephones.
- XIII. Potatoes by acreage groups (under 3 acres and 3 acres and over), 1939, and by production groups, 1934; by counties.—Farms reporting, acres, and quantity harvested.
- XIV. Value of farms of 30 acres and over, by minor civil divisions, for selected counties.—Number of farms and value of land and buildings.
- XV. Abandoned or idle farms.—Number and acreage, with classifications by cause of nonoperation and year of abandonment, by counties.
- XVI. Number, acreage, and value of farms, 1940, and cropland harvested, 1939, classified by tenure of operator, by minor civil divisions, for Wisconsin.
- XVII. Cross-line acreage.—Farms reporting and acreage by place of enumeration and by location of acreage, with relationship to all farms, by counties.
- XVIII. Japanese farm operations.—Number of farms, by tenure of operator, by minor civil divisions, for Arizona, California, Oregon, and Washington.
- XIX. Mortgage study made cooperatively with U. S. Department of Agriculture to obtain on a sample basis, by means of special questionnaires, mortgage data for tenant-operated farms.
- XX. Plantation study.—Statistics for plantations and for cropper and tenant farms of plantations.
- XXI. Farm characteristics by dollar-value groups (value of land and buildings) for selected counties.—Number, acreage, and value of farms; value of farm products; farm mortgages and farm taxes; and cash rent paid or payable; classified by size of farm, for selected counties.
- XXII. A comparison of agriculture within and outside of drainage enterprises in the alluvial lands of the Lower Mississippi Valley.

The preceding list illustrates a wide range in the types of service tabulations which can be summarized as follows:

- I. The simple or straight compilation of data available on machine tabulation sheets but not published.
- II. Special tabulations of statistics on punch cards, not included in the regular tabulation plan.
- III. Frequency or group tabulations.
- IV. Frequency tabulations by other characteristics, such as income groups by age groups.
- V. Simple sample tabulations with various methods of sampling.
- VI. Sample tabulations from matched schedules.
- VII. Sample tabulations with data from several sources, such as the agricultural, population, and housing schedules, etc.
- VIII. Sample tabulations with farm location from matched schedules, by soil types, distance from town, places of purchase of different types of goods, etc.—An extension of the previous method.

A description follows of one of our most interesting special tabulations, made on a cooperative basis with the U. S. Department of Agriculture. This tabulation showing numerous characteristics of farms by income groups was from a 2-percent sample drawn from Agriculture Census punch cards. For this study, the items listed below were tabulated by the following income or total value-of-products groups:

\$1 to	\$99	\$1,500 to	\$1,999
\$100 to	\$249	\$2,000 to	\$2,499
\$250 to	\$399	\$2,500 to	\$3,999
\$400 to	\$599	\$4,000 to	\$5,999
\$600 to	\$749	\$6,000 to	\$9,999
\$750 to	\$999	\$10,000 and	over
\$1,000 to	\$1,499		

1. Number of farms.
2. Land in farms.
3. Cropland harvested.
4. Value of land and buildings.
5. Number of farms by size (under 10 acres, 10 to 29 acres, 30 to 49 acres, 50 to 99 acres, 100 to 179 acres, 180 to 499 acres, 500 to 999 acres, 1,000 acres and over).
6. Farms classified by major source of income (livestock, dairy products, poultry and poultry products, wool, mohair, and other livestock products, field crops, vegetables, fruits and nuts, horticultural specialties, farm products used by farm households, and forest products).
7. Farm operators by age (under 25 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 years and over).
8. Color of farm operators (white and nonwhite).
9. Tenure of farm operators (full owners, part owners, managers, tenants, and croppers).
10. Residence of farm operators.
11. Year of occupancy beginning in 1939 or 1940.
12. Farm labor on farms during weeks of Sept. 24-30, 1939, and March 24-30, 1940.
 - Family labor.
 - Hired labor.
 - Hired by month.
 - Hired by day or week.
 - Other hired labor (including piece work and contract labor).
13. Cash wages paid for hired labor.
 - Hired by month.
 - Hired by day or week.
 - Other hired labor (including piece work and contract labor).
14. Expenditures for feed.
15. Expenditures for implements and machinery.
16. Expenditures for gasoline, distillate, kerosene, and oil.
17. Expenditures for building materials.
18. Expenditures for commercial fertilizer.

19. Expenditures for liming materials.
20. Automobiles (farms reporting).
21. Motortrucks (farms reporting).
22. Tractors (farms reporting).
23. Electric distribution line within 1/4 mile (farms reporting).
24. Dwellings lighted by electricity (farms reporting).
25. Telephones (farms reporting).
26. Farm operators reporting business with or through cooperatives.
27. Farms reporting horses, mules, cattle, and/or hogs.
28. Farms reporting horses and/or mules.
29. Farms reporting horses and/or mules with no tractors reported.
30. Farms reporting horses and/or mules with tractors reported.
31. Farms reporting tractors with no horses or mules reported.
32. Farms not reporting horses, mules, or tractors.
33. Farms reporting cattle.
34. Farms reporting cows milked by number milked (1 cow, 2 cows, 3 or 4 cows, 5 to 9 cows, and 10 or more cows).
35. Farms reporting hogs.
36. Farms reporting sows by number on farms (1 sow, 2 sows, and 3 or more sows).
37. Farms reporting hogs but not reporting sows.

In order that a fair idea of the method and usefulness of this special study may be obtained, a paper read by Irvin Holmes, Statistician on Agriculture Census values, at a recent meeting of the Washington Chapter of the American Statistical Association, follows:

SOME SAMPLING USES OF DATA FROM THE CENSUS OF AGRICULTURE
By Irvin Holmes
Bureau of the Census

The 1930 Census of Agriculture classification of farms by type of farm was used for making type-of-farm tabulations by counties and States of many agricultural items, such as acreage of land in farms, numbers of farms by tenure of operator, expenditures for specified items, etc. For the 1940 Census of Agriculture it was decided to use sample data instead of complete tabulations as a basis for presenting statistics on the characteristics of farms classified according to type (major source of income), according to total value of farm products, and according to color-tenure of operator. Four considerations contributed mainly to this decision: The urgent need for the figures in connection with war programs, particularly statistics on marginal (low income) farms and on farm labor; the necessity for holding costs to a minimum; the greater variety of tabulations that could be made on a sample basis than on a complete basis with the funds available; and the possibility of securing experience and information which would be valuable in preparing plans for future censuses, either on a complete or on a sample basis. The purpose of this talk is to review the work that has been done to date on these tabulations of sample data from the 1940 Census of Agriculture.

SAMPLE DESIGN AND TYPE OF SAMPLING UNIT

The primary objective of these tabulations of sample data was to secure national statistics on farm characteristics. The secondary objective was to provide measures of the variation in these statistics by large geographic regions.

All of the data for one farm for a group of related items, such as value of farm products, are on a single punch card. Consequently it was feasible to use the smallest available sampling unit, that is, the individual farm. Most previous studies of sampling techniques for proposed sample censuses of agriculture have centered about the problem of size of sampling unit; i. e., the problem of balancing enumeration difficulties and costs for small sampling units, such as individual farms, against the loss of information for large sampling units, such as clusters of farms. The number of farms, according to the 1940 Agriculture Census, varies from 135,000 for the New England Division to nearly 1,100,000 for the West North Central Division. It was recognized that it would be desirable to vary the sampling ratio of number of farms for each geographic area for which statistics were desired. It was also recognized that for tabulations of farms classified by type of farm the sampling ratio should be varied by type groups; likewise for any tabulations of farms classified by total value of farm products, it would be desirable to vary the sampling ratio of number of farms by value groups. Administrative considerations made such procedures impractical; consequently, the following alternative was substituted:

First, the cards were sorted into two primary strata: Farms with less than \$10,000 and farms with \$10,000 or more total value of products. The farms with \$10,000 and over total value of farm products represented only 1 percent of all farms, but accounted for approximately

17 percent of the gross farm income for the United States in 1939. The cards for all farms with \$10,000 and over total value of farm products were sorted out and tabulated, i. e., a 100-percent sample was used.

For farms with less than \$10,000 total value of products a 2-percent sample was selected by machine by sorting out all punch cards with serial numbers ending in 15 and 85. The same terminal digit "5" was selected to reduce the number of cards handled in the subsequent sort, i. e., 800,000 compared with 1,200,000. The "15" was selected to reduce the number of counties excluded from the sample. There were only 22 counties in the United States, chiefly independent cities in Virginia, which had less than 15 farms at the time of the 1940 Census, and which were, therefore, excluded from this 2-percent sample.

There is no reason to infer any relationship between the characteristics of the farms and their serial numbers. The serial numbers had been placed on the individual farm schedules prior to the time that the data were transferred from the schedules to the punch cards. The selection of the sample farms was on a county basis; that is, the secondary stratification of the 2-percent sample was geographic. Although the machine selection of the sample farms was done by counties, the individual farm schedules had been arranged by minor civil divisions within each county prior to numbering. Consequently, the geographic distribution of the sample farms approaches a stratification by minor civil divisions within each county. (See illustrative map of Morrow County, Ohio, on succeeding pages.) To a considerable extent, the original order of enumeration was preserved in numbering the schedules. Accordingly, the 2-percent sample also approximates a selection along the enumerator's route of every 50th farm in the "Under \$10,000" category.

SCOPE OF TABULATIONS

At the present time, the following tabulations are completed or in progress:

- (1) Analysis of characteristics of small farms.
- (2) Analysis of farm characteristics by type of farm.
- (3) Analysis of value of farm products by color-tenure of operator.

The first tabulations are being made in cooperation with the Bureau of Agricultural Economics and the Farm Security Administration of the Department of Agriculture. Preliminary reports, or press releases, are now being prepared showing figures for those items by geographic regions for which the expected error is small enough to justify publication. Present plans are to publish the results of all three of these series of tabulations in a special monograph.

METHODS OF EXPANDING THE SAMPLE

For the tabulations for the Department of Agriculture, two factors were available for expanding or inflating the sample. Published figures were available for the total number of farms and total value of farm products for each value-of-farm-products group. For these tabulations it was decided to use the total number of farms in each value group for expanding the sample data.

For nearly all of the items sampled, the totals for all value-of-farm-products groups were also known. On such items, the expanded sample figures for each value-of-farm-products group were scaled to equal these previously published totals by simple proportionate adjustments. In some of the tabulations, cross-classification tables were involved, such as numbers of farms cross classified by total value of farm products and by size of farm. In such cases, the expanded sample figures for all cells were adjusted to equal these known totals by a succession of horizontal and vertical proportionate adjustments. These adjustments were made for the convenience of any user who might wish to relate the figures to previously published Census data.

It was recognized that for some of the items, particularly such items as value of land and buildings and expenditures, some increase in precision might have been obtained had the sample data been expanded by using an inflation factor based on the total value of farm products for each value-of-products group. The decision to use total number of farms instead of value of products in expanding the sample was determined partly by administrative reasons and partly by the fact that, since the tabulation sort was by value of farm products, much of the over-all relationship between value of farm products and the sampled items had already been taken into account.

A third expansion factor, which could have been used, was the reciprocal of the sampling ratio based on number of farms for the total sample, that is, for all value groups combined. Obviously this would have given less precision than that obtained by the use of sampling ratios for the individual value groups. This would be particularly true for the terminal value groups where the population numbers of farms are relatively small and the sampling ratios quite variable.

PRECISION OF DATA

Because of cost and operational considerations, it was considered impractical to vary the size of sample by value groups or by geographic areas. For this reason, it is to be expected that the relative sampling errors will be considerably smaller for the central value groups, for which the number of farms is generally large, than for terminal value groups which have few farms. A similar difference

in relative sampling errors is to be expected as between geographic divisions with large numbers of farms and geographic divisions with fewer farms. Likewise, the relative sampling errors differ as between items, depending, in the case of the farm counts, upon differences in the proportion of farms reporting specified characteristics, and, for quantitative items, upon differences in the variability of the items.

For example, in estimating average age of operator, the size of sample necessary for a given degree of precision is considerably less than that required for all land in farms, cropland harvested, value of land and buildings, and work off farm. Some evidence is available from California and Illinois: For the upper terminal value groups in Illinois and California the sample size for all land in farms would need to be from 40 to 80 times as large as that for average age of operator to secure the same relative precision. The higher-value groups include not only farms with large acreages but also small-size farms, such as hatcheries, greenhouses, and nurseries which accounts for the high degree of variability.

For work off farm in these high income groups the sample data for California indicate that it would require a sample approximately 250 times as large as that for average age of operator to secure the same relative precision. Most operators of large-income farms report very few days of work off farm, but a few such operators report nearly full-time nonfarm employment, generally at professional or business occupations. To secure statistics on the number of days of work off farm for these value groups with a relative error of 10 percent would require approximately a 33-percent sample, which figure includes a correction for sampling from a finite population. In these comparisons the formula used is for an unstratified sample; therefore, the coefficients of variation may slightly overstate the facts.

In the tables accompanying the reports, the figures have been marked with an asterisk when the expected sampling error is relatively large. However, in evaluating the reliability of the figures, the consistency in the pattern of relationships should be taken into account as well as the indicated precision for individual cells. For practically all items studied to date the relationship patterns have been remarkably consistent between States and geographic divisions.

Other illustrations.—Another tabulation from samples was made for a farm paper,¹ to determine, among other things, how the subscribers and their farms varied from the average, and from their nearest neighbors and their farms. One of the many colored illustrations resulting from this sample is included.

Another example of a somewhat different type of research is represented by a study which correlated data from different sources—schedules—from the censuses of agriculture, housing, and population; information from a private agency; and a special questionnaire—and charted some of the data on a county map. Morrow County, Ohio, had been used at two censuses in a project to show the location of each farm. Recorded on the map are the numbers of the farm schedules for 1940. With farm location as a basis and the returns from farmers on a special questionnaire, the buying habits of the farmers have been charted.

Charts were prepared on the following subjects:

- Groceries
- Farm machinery
- Men's work clothing
- Women's best dresses, etc.
- Stoves, refrigerators, etc.
- Bedding, floor covering, window shades, etc.
- Beauty preparations

The first three of these charts are included in the illustrations on succeeding pages.

This farm location technique can also be used in designated areas to obtain any business, agricultural, sociological, or other data from agricultural or other schedules. By matching schedules from the sources mentioned above and assembling the data on one master card, the value of the material can be greatly enhanced. Examples are yields by type of land, values by type of soil, type of farming by type of soil, mapping and outlining of market areas, etc., from reports of places farmers bought various kinds of merchandise, such as groceries, consumers' goods, farm machinery, etc. The possibilities of this method can hardly be exaggerated. Aside from other statistical uses, farm location is needed for enumeration control (to assure complete coverage). It is hoped a detailed description

¹ Successful Farming.

of the Morrow County, Ohio, results may be published in the form of a cooperative monograph.²

The 2-percent sample farms for Morrow County which were included in the cooperative survey, "Specified Farm Characteristics for Farms Classified by Value of Products," have also been identified on the Morrow County maps as examples of the geographic distribution in the selection of the sample farms.

The location represented in this stratification and other phases of sampling can be tested and comparisons can be made with other farms, location, soil types, etc. By using adjoining farms, the advantages and disadvantages of blocks or

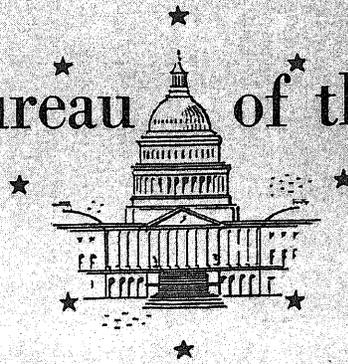
groups of farms in sampling material may be determined. The results of all of these studies appear so promising that the Bureau has been requested, many times, to bring them to the attention of marketing, economic, engineering, sociological, and other students and to invite them to participate. A selection of the examples of uses made is attached. By writing the Census or the agency or firms mentioned for further information or by calling at the Bureau of the Census more complete descriptions of the methods may be obtained.

²Magazine Marketing Service and Bureau of the Census cooperating.

AN ANALYSIS BASED ON SPECIAL TABULATIONS BY THE

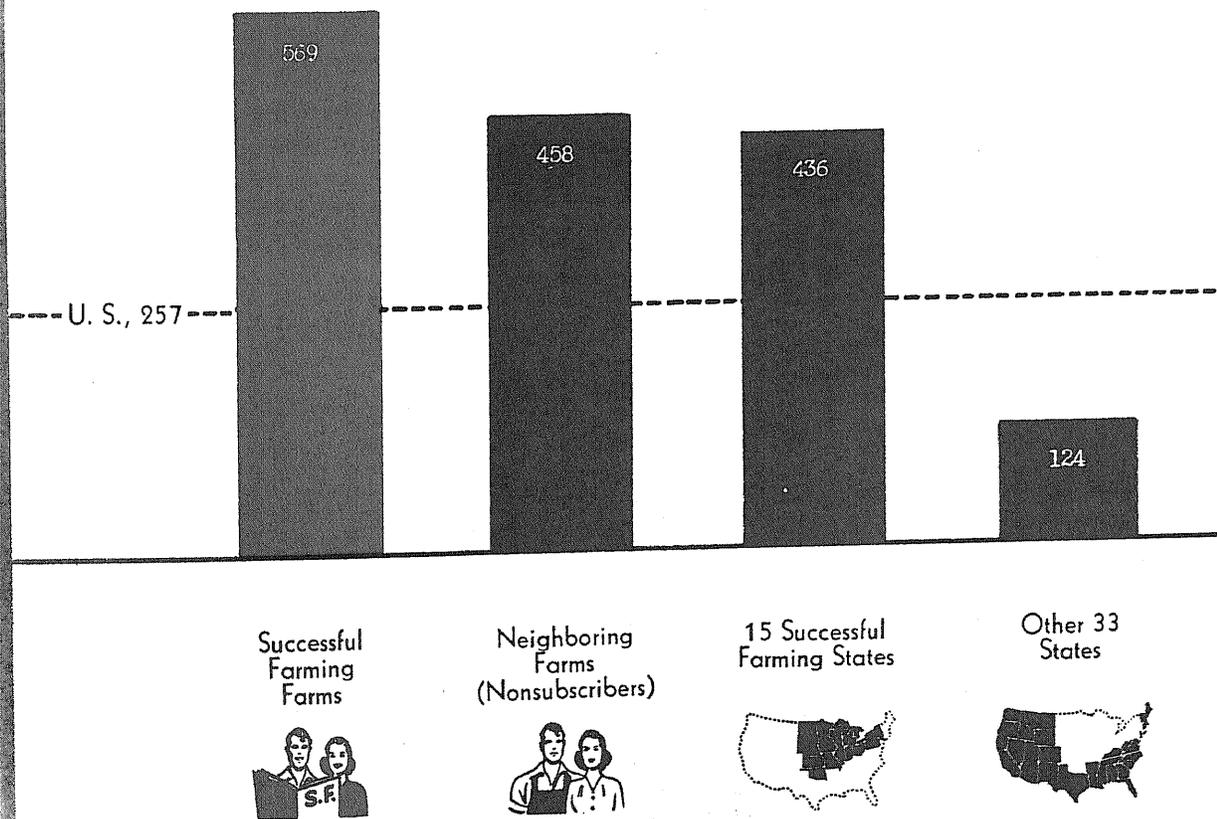
U. S. Bureau of the Census

Information obtained
and tabulated by U. S.
Bureau of the Census



Released January, 1943,
by Successful Farming,
Des Moines, Iowa

Tractors Per 1,000 Farms



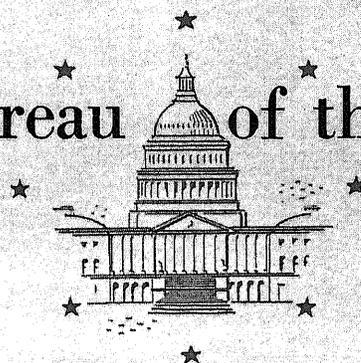
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... demonstrating that Successful Farming subscribers are the best farm families ... in their communities ... in the best farm region and in the nation. They are your best farm customers.

AN ANALYSIS BASED ON SPECIAL TABULATIONS BY THE

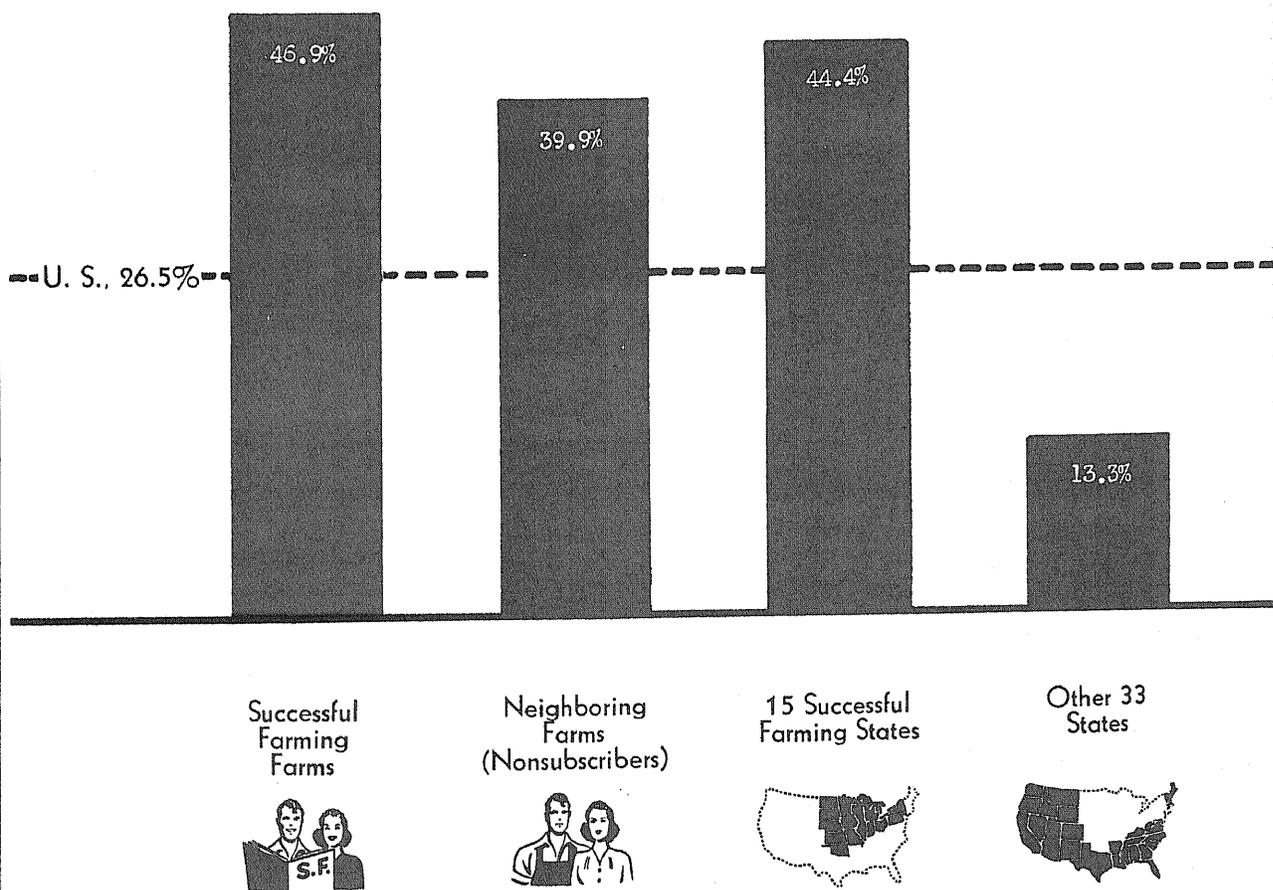
U. S. Bureau of the Census

Information obtained
and tabulated by U. S.
Bureau of the Census



Released January, 1943,
by Successful Farming,
Des Moines, Iowa

Percent Reporting Major Source of Income From Livestock,
Livestock Products, 1939



(Over)

SF-1226.16-43

... demonstrating that Successful Farming subscribers are the best farm families ... in their communities ... in the best farm region and in the nation. They are your best farm customers.

PERCENT OF FARMS REPORTING BY MAJOR SOURCES OF INCOME

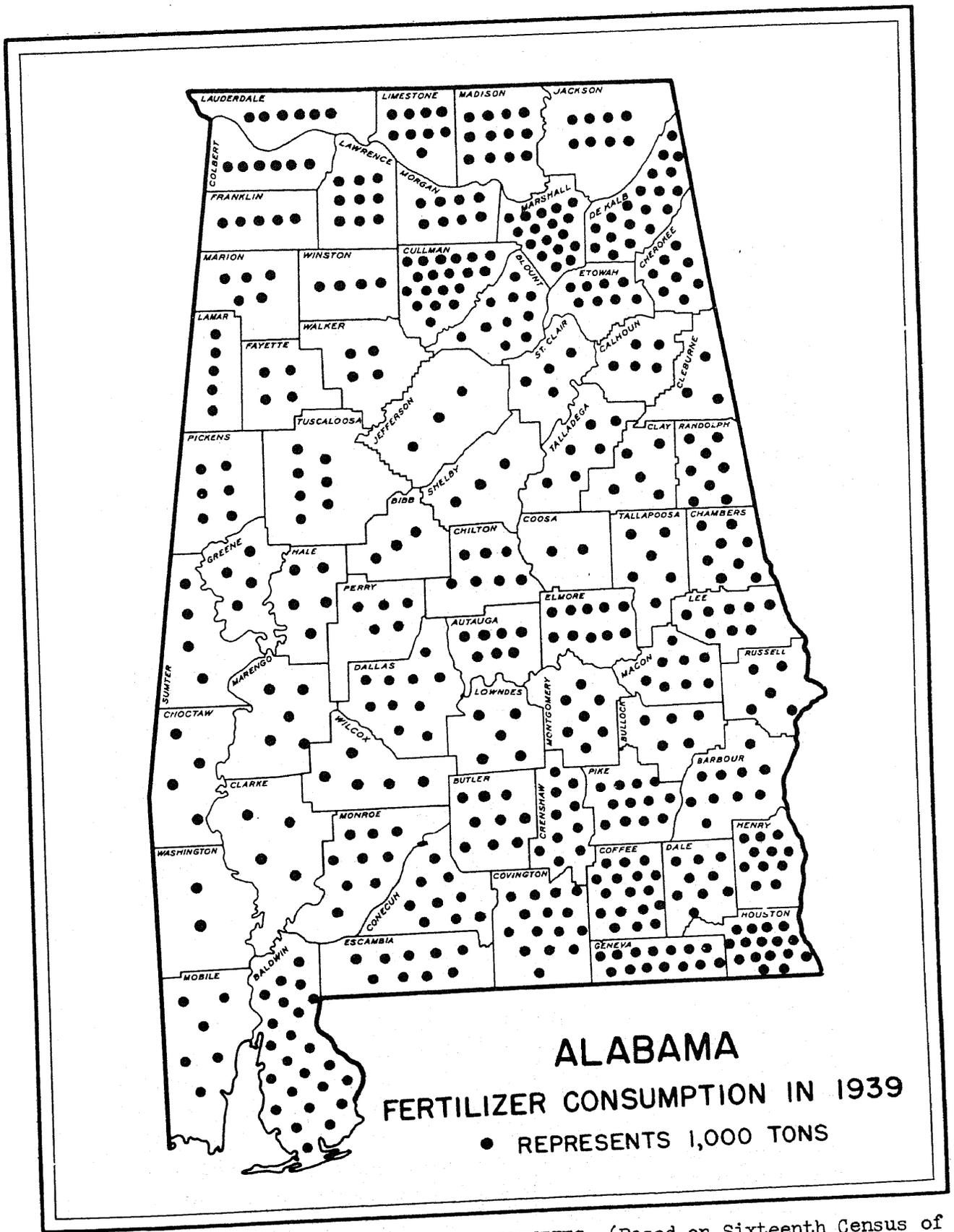
Farms Reporting and Value of Farm Products Sold, Traded or Used by Farm Households, Classified by Major Source of Income, 1939.

Farms with Major Source of Income from:	U. S. CENSUS SAMPLE OF		U. S. CENSUS PUBLISHED REPORT FOR ALL FARMS IN		
	Successful Farming Farms	Neighboring Farms (Nonsubscribers)	15 Successful Farming States	Other 33 States	United States
Livestock Sold or Traded	26.2%	23.6%	21.2%	5.5%	12.2%
Dairy Products Sold or Traded	16.8	12.0	18.3	4.5	10.4
Poultry & Poultry Products Sold or Traded	3.7	4.1	4.6	2.9	3.6
Other Livestock Products Sold or Traded	.2	.2	.3	.4	.4
Total Livestock and Livestock Products	<u>46.9%</u>	<u>39.9%</u>	<u>44.4%</u>	<u>13.3%</u>	<u>26.6%</u>
Field Crops Sold or Traded	35.3	35.0	28.2	42.9	36.6
Vegetables Harvested for Sale	1.0	1.3	1.2	1.4	1.4
Fruits and Nuts Sold or Traded	.5	1.1	1.2	3.0	2.2
Horticultural Specialties Sold	...	.1	.4	.3	.3
Total Crops	<u>36.8%</u>	<u>37.5%</u>	<u>31.0%</u>	<u>47.6%</u>	<u>40.5%</u>
Forest Products Sold	.1	.1	.2	.5	.4
Farm Products Used by Farm Households	16.2	22.5	24.4	38.6	32.5
Total Major Sources of All Groups	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

ALABAMA
Commercial Fertilizer Used in 1939

County	Number of Farms Using Fertilizer	Fertilizer Tonnage	County	Number of Farms Using Fertilizer	Fertilizer Tonnage
Autauga	2,020	7,114	Jackson	4,095	8,388
Baldwin	2,114	24,378	Jefferson	2,077	2,946
Barbour	3,192	9,817	Lamar	2,977	5,101
Bibb	1,514	2,626	Lauderdale	3,576	6,456
Blount	4,156	10,311	Lawrence	3,265	8,579
Bullock	2,265	4,674	Lee	2,373	7,891
Butler	3,075	9,278	Limestone	4,340	9,409
Calhoun	2,448	4,517	Lowndes	2,225	4,732
Chambers	2,775	7,711	Macon	2,864	8,107
Cherokee	2,709	8,487	Madison	4,755	12,365
Chilton	3,168	7,486	Marengo	3,107	5,273
Choctaw	2,441	3,763	Marion	3,400	5,379
Clarke	2,829	3,733	Marshall	5,287	16,685
Clay	2,449	4,570	Mobile	1,598	6,314
Cleburne	1,674	3,341	Monroe	3,542	9,405
Coffee	3,674	16,625	Montgomery	2,117	7,420
Colbert	1,915	5,856	Morgan	3,706	8,364
Conecuh	3,053	8,634	Perry	2,403	5,254
Coosa	1,526	2,361	Pickens	3,398	6,216
Covington	3,728	14,566	Pike	3,033	11,755
Crenshaw	2,603	9,611	Randolph	3,266	7,957
Cullman	6,573	19,357	Russell	2,248	5,321
Dale	2,246	8,751	St. Clair	2,251	3,605
Dallas	3,755	9,940	Shelby	1,651	3,070
De Kalb	6,184	18,709	Sumter	2,355	4,454
Elmore	3,238	10,238	Talladega	2,936	6,382
Escambia	1,856	8,597	Tallapoosa	2,732	6,409
Etowah	3,033	7,594	Tuscaloosa	3,962	7,321
Fayette	2,726	3,808	Walker	2,916	3,642
Franklin	2,831	4,691	Washington	1,190	2,084
Geneva	3,055	13,525	Wilcox	2,934	4,754
Greene	2,417	3,780	Winston	2,036	3,735
Hale	2,493	5,127			
Henry	2,496	11,492			
Houston	3,769	16,136	State Total	196,515	525,977

Page 8.—FERTILIZER CONSUMPTION BY COUNTIES (Based on Sixteenth Census of the United States). Published by The National Fertilizer Association.



Page 9.—FERTILIZER CONSUMPTION BY COUNTIES (Based on Sixteenth Census of the United States). Published by The National Fertilizer Association.

Article taken from

"Sales Management"

May 1, 1943

Using the Government

ANOTHER EXAMPLE OF COOPERATION between government and private industry is to be found in a booklet issued by *Successful Farming* called "An Analysis Defining Successful Farming." For the first time in the history of the Bureau of the Census, the census schedules of a sample of subscribers to a specific magazine and of their non-subscribing neighbors were segregated for tabulation. By matching subscribers' names with census enumerator's schedules some one hundred different questions asked by the census are available for comparison.

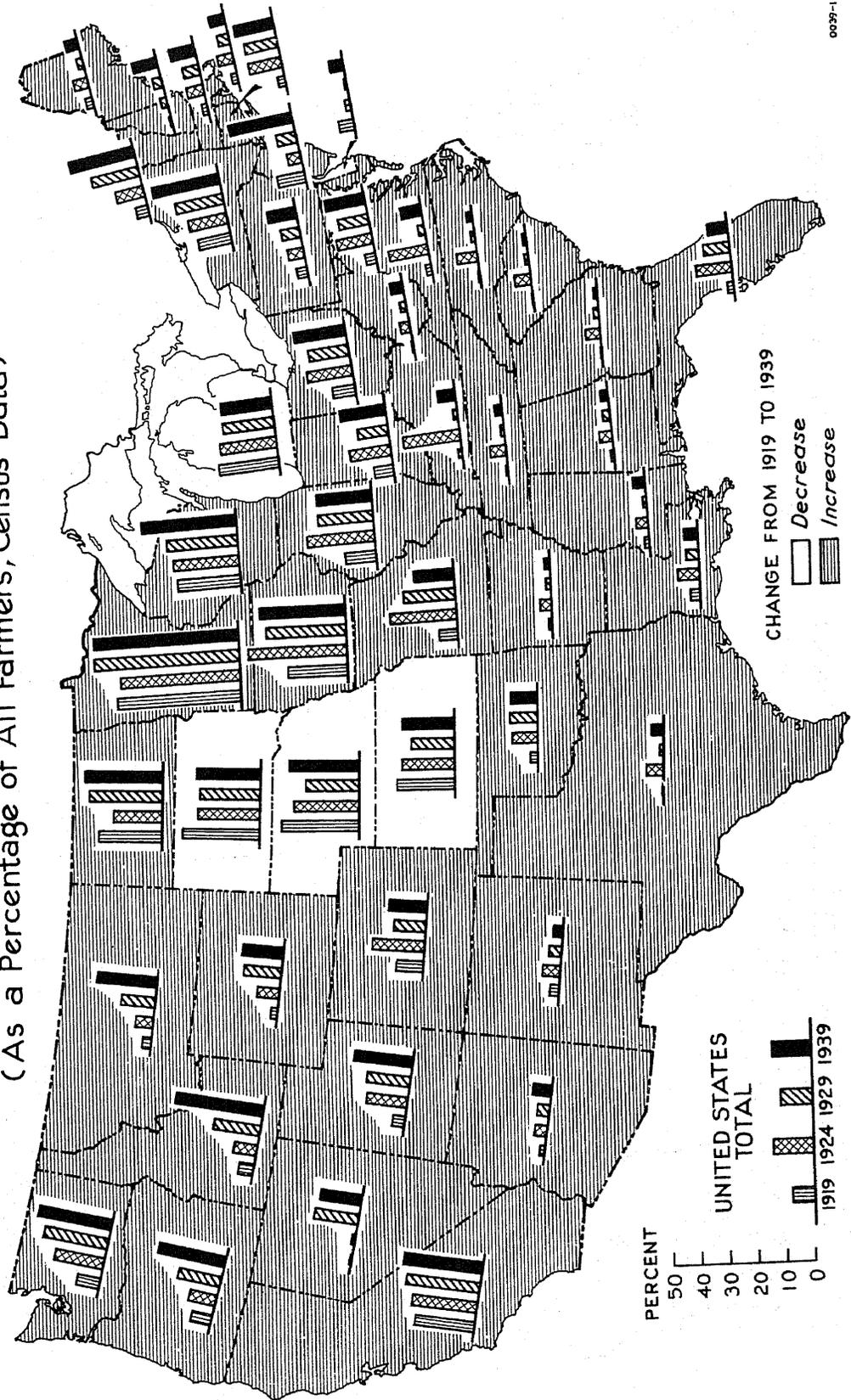
This study by *Successful Farming* is interesting on its own, and also because it lights the way for other publishers and manufacturers to make practical use of the extraordinary machinery we have in Washington. Innumerable questions which now go unanswered could be answered if marketing men took the trouble to find out what is available in Washington and how to use that information.

What *Successful Farming* did could be done by any other group. They had no special pull. They do have alertness and initiative.

The Bureau of the Census is permitted by law to do special jobs on a cost basis, and for *Successful Farming* two samples were drawn from the census of Agriculture, Housing and Population. The first represented 2,000 farms, a cross-section of *Successful Farming's* subscriber names, drawn by a mechanically random method from a list of 6,667 names. The second represented another 2,000 farms, adjoining the farms of the first 2,000 families but definitely not subscribers to that publication. Included in the study are comparisons on farm buildings, gross income, automotive equipment, farm homes, implements, machinery, etc.

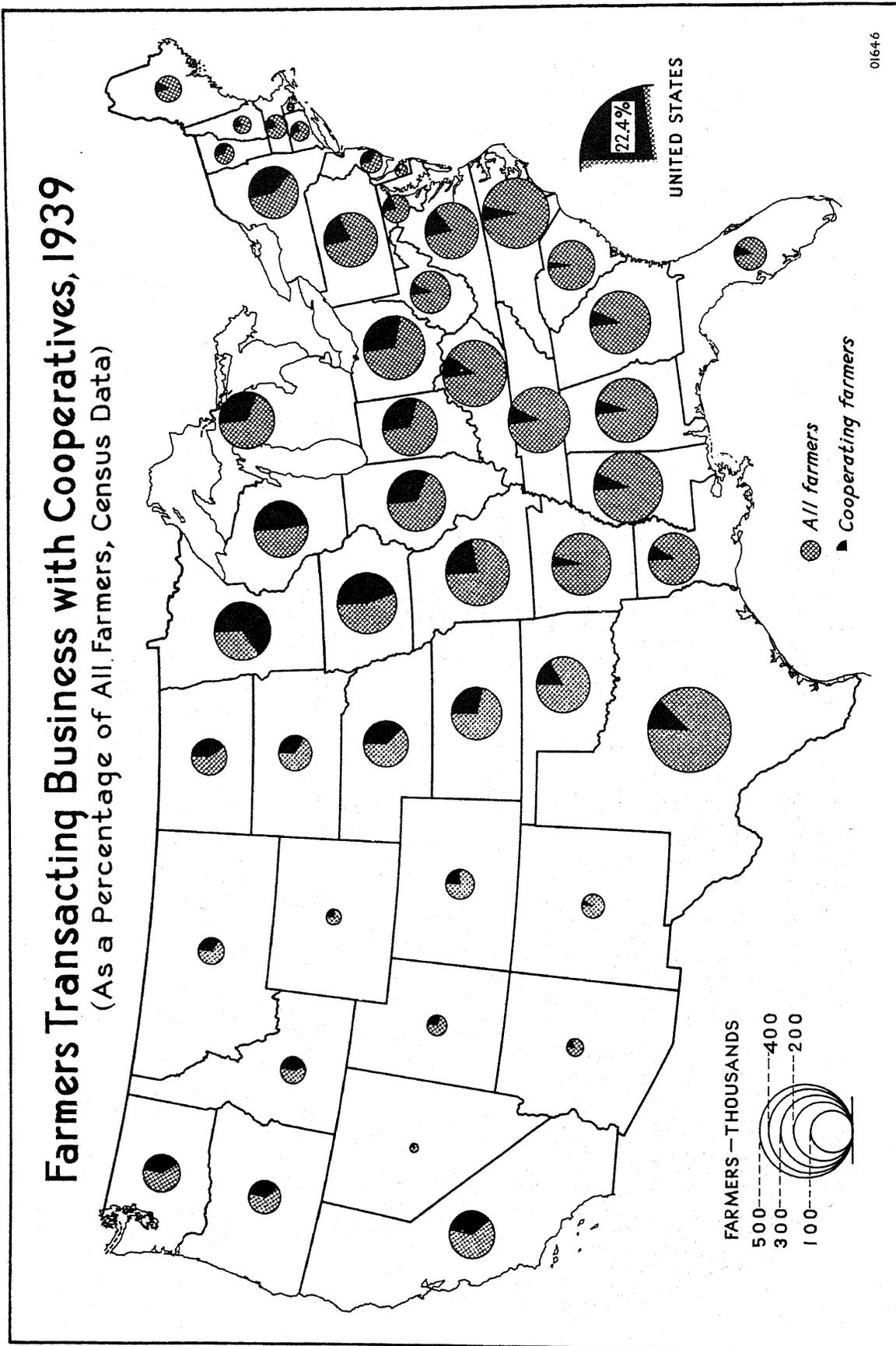
Farmers Selling Cooperatively, 1919, 1924, 1929, 1939

(As a Percentage of All Farmers, Census Data)

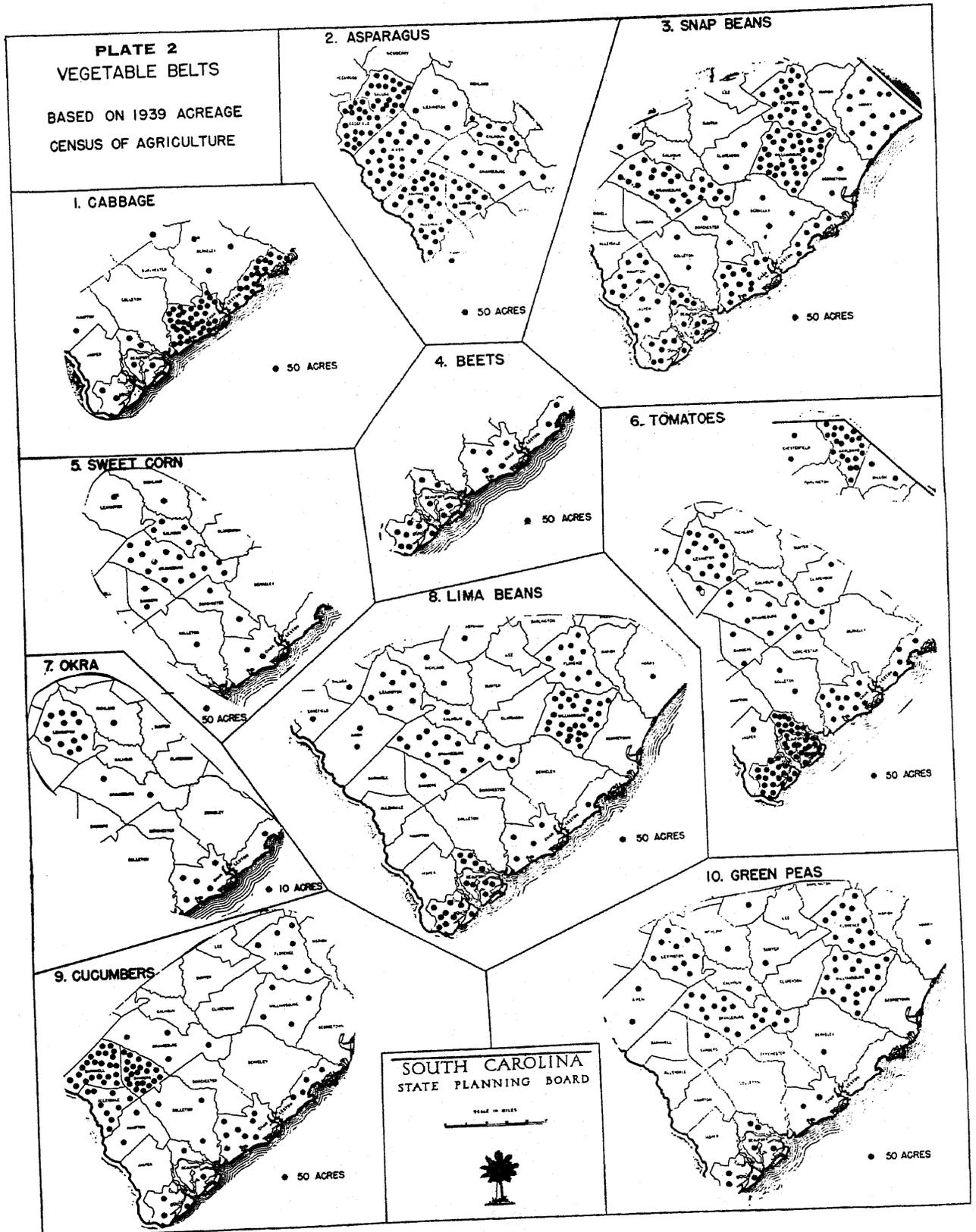


0039-1

Selling and Buying Cooperatively by Farmers—Farm Credit Administration,
U. S. Department of Agriculture



Selling and Buying Cooperatively by Farmers—Farm Credit Administration,
U. S. Department of Agriculture



Page from bulletin Number 12, FROM FARM TO FACTORY, prepared by South Carolina State Planning Board. (Illustrative of several pages in that bulletin, based on data from Census of Agriculture, 1940)

BEEF-HOGS-SHEEP 1940

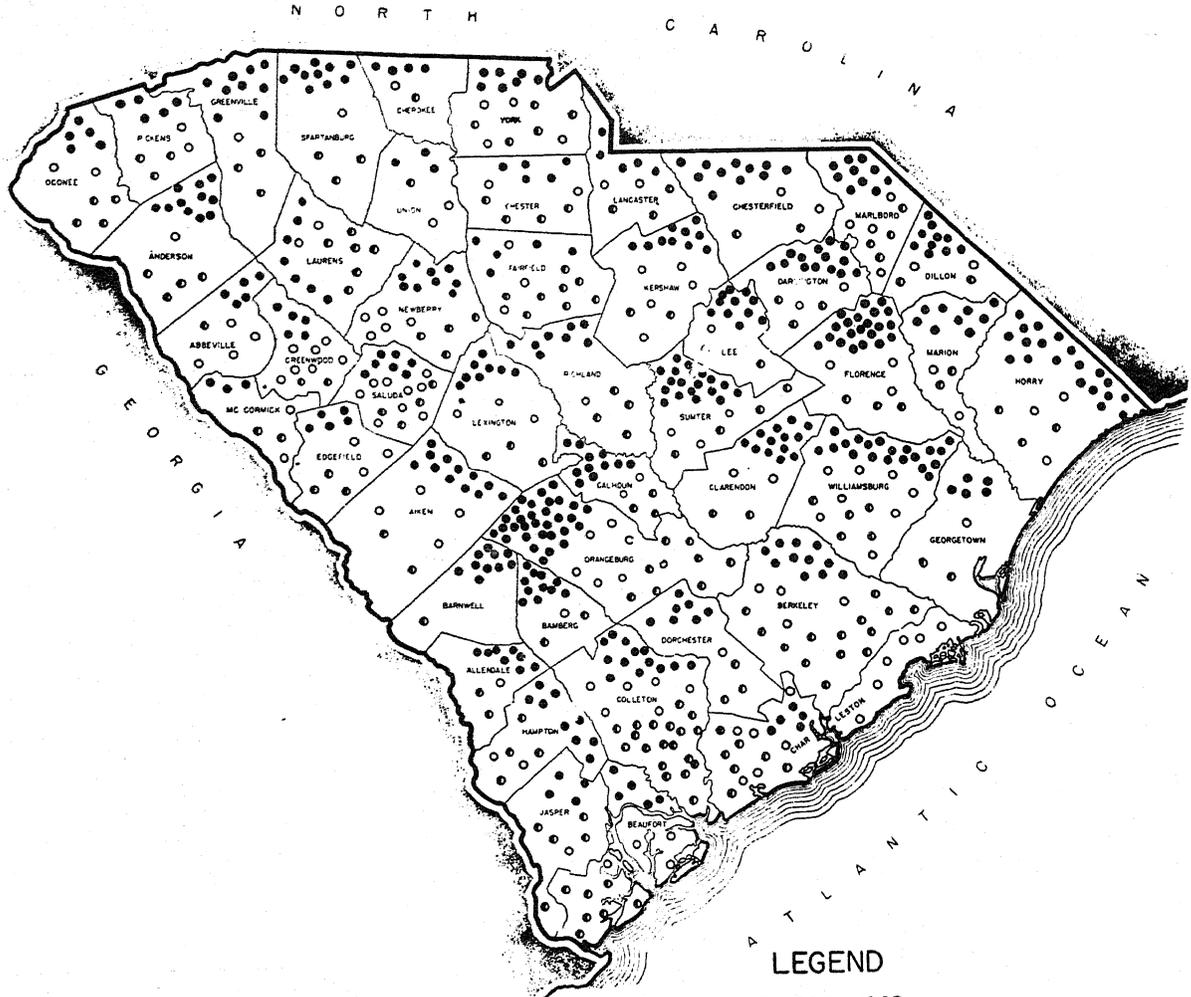
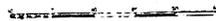


PLATE 4

SOUTH CAROLINA
STATE PLANNING BOARD

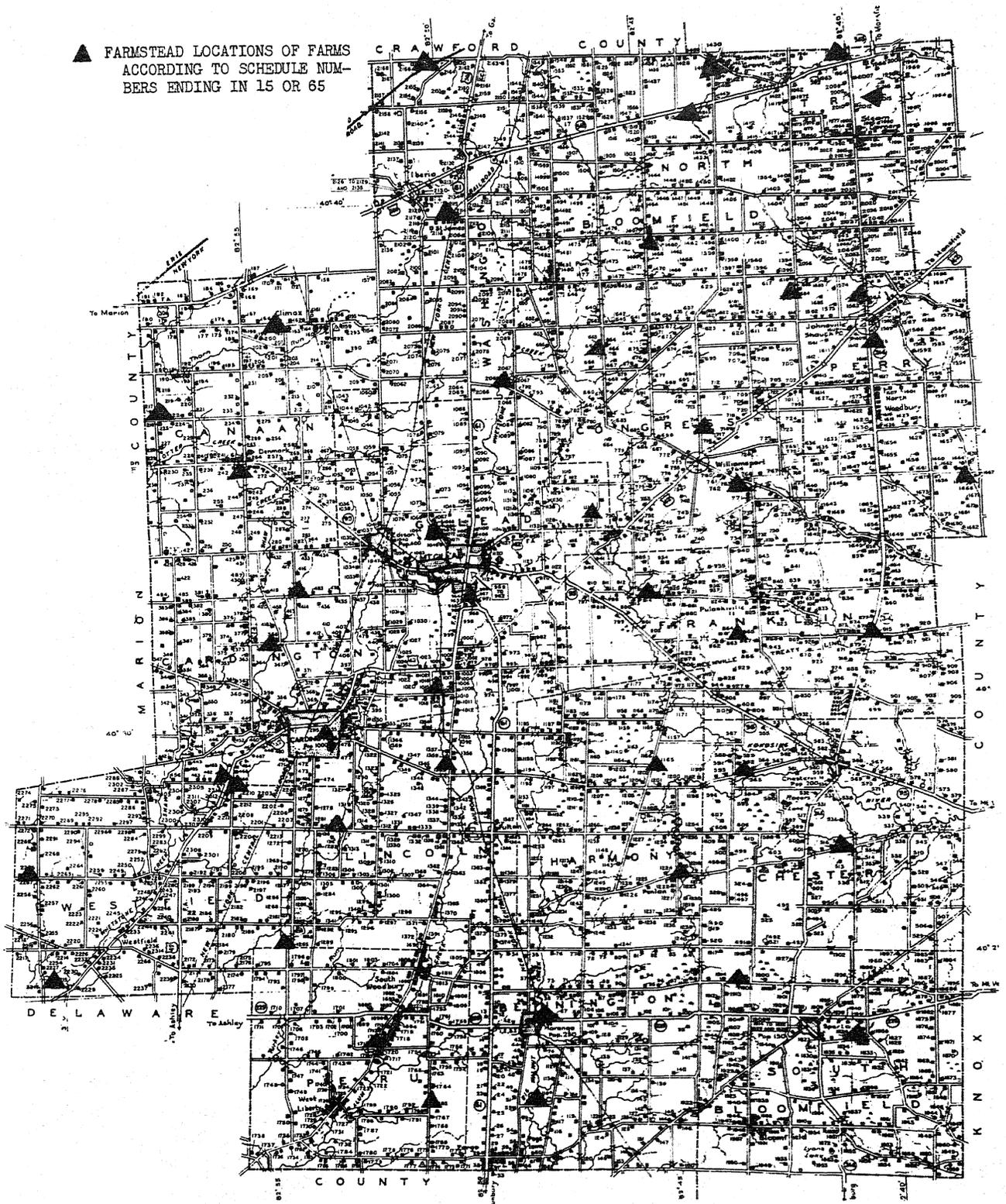
SCALE IN MILES



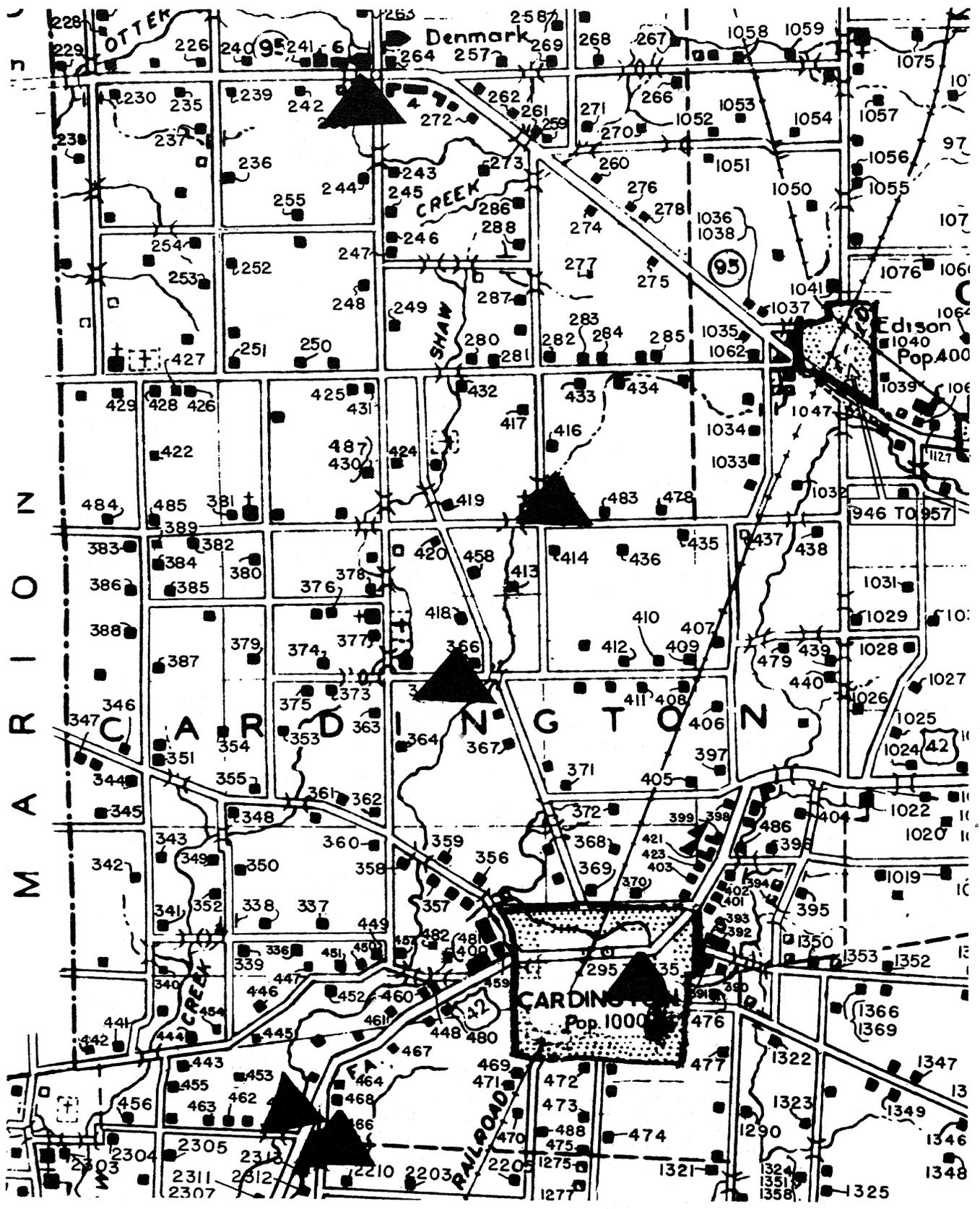
Source: CENSUS OF AGRICULTURE, 1940



Page from bulletin Number 12, FROM FARM TO FACTORY, prepared by South Carolina State Planning Board. (Illustrative of several pages in that bulletin, based on data from Census of Agriculture, 1940)

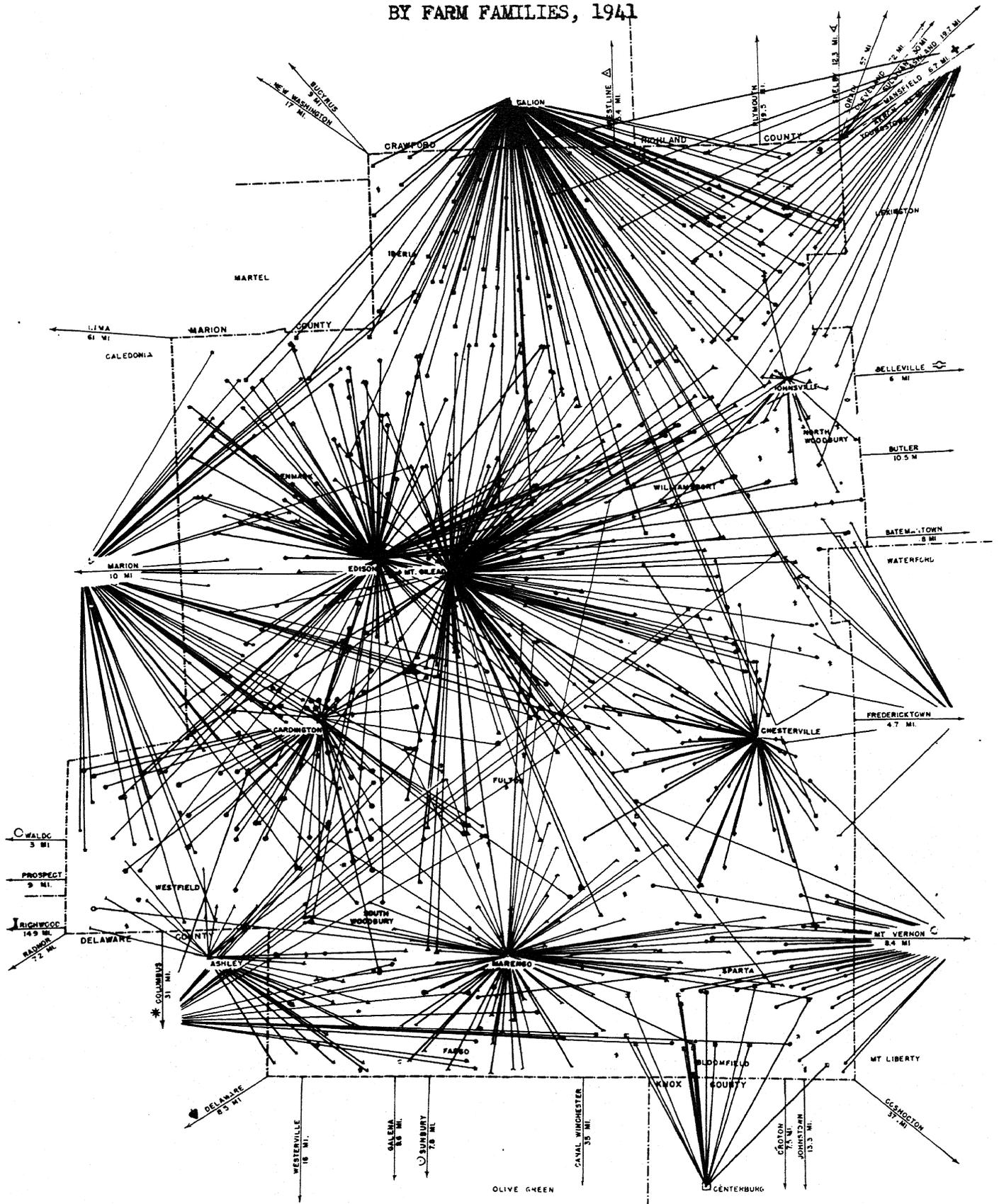


MORROW COUNTY, OHIO—FARM LOCATION, CENSUS OF AGRICULTURE: 1940, INCLUDING DISTRIBUTION OF FARMS IN 2-PERCENT SAMPLE



CARDINGTON TOWNSHIP—FARM LOCATION AND DISTRIBUTION OF 2-PERCENT SAMPLE
(ENLARGEMENT OF SELECTED AREA OF MORROW COUNTY, OHIO)

MORROW CO., OHIO USUAL PLACE OF BUYING FARM MACHINERY BY FARM FAMILIES, 1941

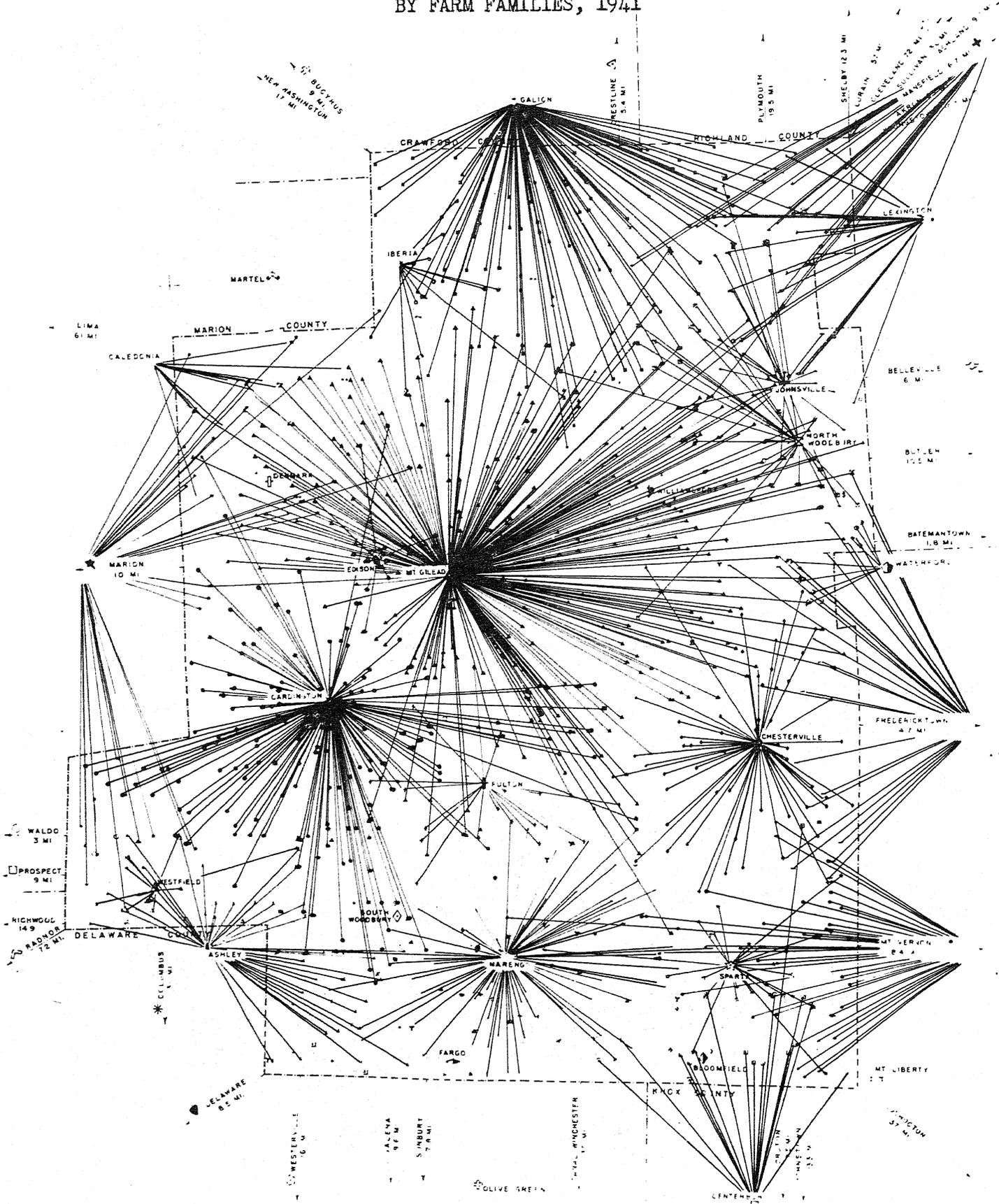


Cooperative survey--U. S. Bureau of the Census,
Department of Commerce with Magazine Marketing Service, N. Y.

MORROW CO., OHIO

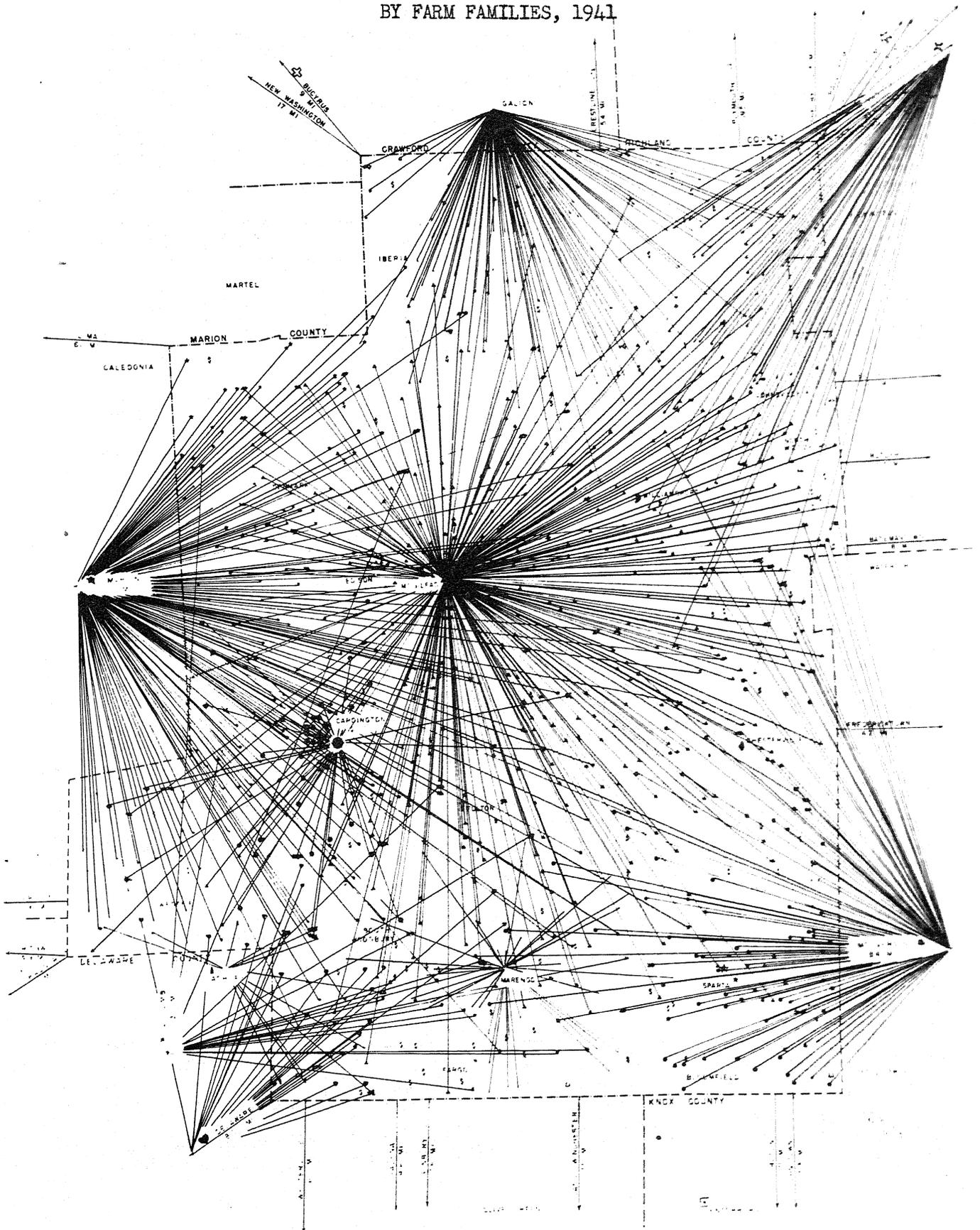
USUAL PLACE OF BUYING GROCERIES

BY FARM FAMILIES, 1941



Cooperative survey--U. S. Bureau of the Census,
Department of Commerce with Magazine Marketing Service, N. Y.

MORROW CO., OHIO
USUAL PLACE OF BUYING
MEN'S WORK CLOTHING
BY FARM FAMILIES, 1941



FARM ELECTRIFICATION DATA BY STATES

1942 Compared with 1940

State	Number of Farms	Dwellings Within 1/4 Mile Distribution Line		U. S. Census Data as of April 1, 1940						EEI Data			
		Number	%	Total Electrified		Home Plants		Number and % on Power Lines		Number and % on Power Lines			
				Number	%	Number	%	(April 1, 1940)	%	(Dec. 31, 1940)	%		
Total United States	6,096,799	2,780,207	45.6	2,032,316	33.3	179,067	2.9	1,853,249	30.4	2,069,759	33.9	2,486,230	40.8
Maine.....	38,980	24,160	62.0	21,124	54.2	903	2.3	20,221	51.9	21,246	54.5	23,560	60.4
New Hampshire.....	16,554	12,374	74.7	11,184	67.6	339	2.1	10,845	65.5	11,616	70.2	13,510	81.6
Vermont.....	23,582	14,855	63.0	12,873	54.6	660	2.8	12,213	51.8	13,103	55.6	15,240	64.6
Massachusetts.....	31,897	28,043	87.9	26,648	83.5	428	1.3	26,220	82.2	26,757	83.9	27,200	85.3
Rhode Island.....	3,014	2,644	87.7	2,511	83.3	54	1.8	2,457	81.5	2,497	82.8	2,560	84.9
Connecticut.....	21,163	18,542	87.6	17,494	82.7	499	2.4	16,995	80.3	17,304	81.8	18,100	85.5
<i>New England</i>	<i>156,190</i>	<i>100,618</i>	<i>74.4</i>	<i>91,834</i>	<i>67.9</i>	<i>2,883</i>	<i>2.1</i>	<i>88,961</i>	<i>65.8</i>	<i>92,583</i>	<i>68.4</i>	<i>100,170</i>	<i>74.1</i>
New York.....	153,238	115,879	75.6	106,804	69.7	4,521	3.0	102,283	66.7	106,531	69.5	114,650	74.8
New Jersey.....	25,835	23,056	89.2	21,695	84.0	397	1.6	21,298	82.4	21,632	83.7	23,260	90.0
Pennsylvania.....	169,027	121,282	71.8	98,937	58.5	4,856	2.9	94,081	55.6	101,095	59.8	114,660	67.8
<i>Middle Atlantic</i>	<i>348,100</i>	<i>280,217</i>	<i>74.8</i>	<i>227,438</i>	<i>65.3</i>	<i>9,774</i>	<i>2.8</i>	<i>217,802</i>	<i>62.5</i>	<i>229,258</i>	<i>65.9</i>	<i>252,570</i>	<i>72.6</i>
Ohio.....	233,783	170,897	73.1	143,436	61.4	5,756	2.5	137,680	58.9	149,563	64.0	169,120	72.3
Indiana.....	184,549	123,662	67.0	95,575	51.8	4,448	2.4	91,127	49.4	106,185	57.5	128,730	69.8
Illinois.....	213,439	114,088	53.5	87,611	41.0	7,584	3.5	80,087	37.5	95,293	44.6	117,620	55.1
Michigan.....	187,589	153,042	81.6	133,095	71.0	1,969	1.1	131,126	69.9	136,546	72.8	154,240	82.2
Wisconsin.....	186,735	126,287	67.6	95,158	51.0	7,002	4.1	87,556	46.9	94,188	50.4	105,720	56.6
<i>East North Central</i>	<i>1,008,095</i>	<i>687,976</i>	<i>68.4</i>	<i>554,875</i>	<i>55.1</i>	<i>27,359</i>	<i>2.7</i>	<i>527,516</i>	<i>52.4</i>	<i>581,775</i>	<i>57.8</i>	<i>675,430</i>	<i>67.1</i>
Minnesota.....	197,351	80,220	40.6	59,838	30.3	9,763	4.9	50,075	25.4	55,736	28.2	75,860	38.4
Iowa.....	213,318	107,359	50.3	86,786	40.7	13,478	6.3	73,308	34.4	89,103	41.8	114,140	53.5
Missouri.....	256,100	74,035	28.9	45,355	17.7	6,151	2.4	39,204	15.3	49,671	19.4	66,030	25.0
North Dakota.....	73,962	7,310	9.9	11,448	15.5	8,228	11.1	3,218	4.4	4,047	5.5	5,840	7.9
South Dakota.....	72,454	8,444	11.7	12,845	17.7	8,864	12.2	3,981	5.5	4,518	6.2	6,750	9.3
Nebraska.....	121,062	40,969	33.8	34,886	28.8	12,054	9.9	22,832	18.9	27,259	22.5	32,380	26.7
Kansas.....	156,327	45,067	28.8	41,549	26.6	13,589	8.7	27,960	17.9	31,200	20.3	37,200	23.8
<i>West North Central</i>	<i>1,090,574</i>	<i>363,404</i>	<i>33.3</i>	<i>292,705</i>	<i>26.8</i>	<i>72,127</i>	<i>6.6</i>	<i>220,578</i>	<i>20.2</i>	<i>262,017</i>	<i>24.3</i>	<i>338,800</i>	<i>31.1</i>
Delaware.....	8,994	6,096	67.8	3,699	41.1	154	1.7	3,545	39.4	4,348	48.3	5,637	62.7
Maryland.....	42,110	23,700	56.3	18,351	43.6	1,234	3.0	17,117	40.6	18,539	44.0	24,070	58.6
District of Columbia.....	65	60	92.3	54	83.0	1	1.5	53	81.5	53	81.5	53	81.5
Virginia.....	174,885	77,255	44.2	44,348	25.4	2,204	1.3	42,144	24.1	47,058	26.9	57,630	33.0
West Virginia.....	99,282	36,958	37.2	26,735	26.9	1,536	1.5	25,199	25.4	27,922	28.1	31,770	32.0
North Carolina.....	278,276	124,017	44.6	71,196	25.6	3,569	1.3	67,627	24.3	77,414	27.8	98,920	35.5
South Carolina.....	137,558	56,731	41.2	28,764	20.9	1,196	0.9	27,568	20.0	37,382	27.2	48,870	35.5
Georgia.....	216,033	88,427	40.9	43,958	20.3	1,549	0.7	42,409	19.6	53,683	24.8	71,040	32.9
Florida.....	62,248	25,063	40.3	16,472	26.5	996	1.6	15,476	24.9	16,403	26.4	20,440	32.8
<i>South Atlantic</i>	<i>1,019,451</i>	<i>438,907</i>	<i>43.0</i>	<i>253,577</i>	<i>24.9</i>	<i>12,439</i>	<i>1.2</i>	<i>241,138</i>	<i>23.7</i>	<i>282,800</i>	<i>27.7</i>	<i>359,030</i>	<i>35.2</i>
Kentucky.....	252,894	79,740	31.5	42,288	16.7	3,681	1.4	38,607	15.3	44,372	17.5	60,560	23.9
Tennessee.....	247,617	74,276	30.0	40,519	16.4	1,635	0.7	38,884	15.7	42,676	17.2	53,000	21.4
Alabama.....	231,746	77,579	33.5	35,725	15.4	1,819	0.8	33,907	14.6	43,440	18.7	55,900	24.1
Mississippi.....	291,092	85,647	29.4	27,670	9.5	1,592	0.5	26,078	9.0	29,059	10.0	36,980	12.7
<i>East South Central</i>	<i>1,023,349</i>	<i>317,242</i>	<i>31.0</i>	<i>146,202</i>	<i>14.3</i>	<i>8,736</i>	<i>0.9</i>	<i>137,476</i>	<i>13.4</i>	<i>159,547</i>	<i>15.6</i>	<i>206,440</i>	<i>20.2</i>
Arkansas.....	216,674	58,732	27.1	23,435	10.8	2,132	1.0	21,303	9.8	26,026	12.0	35,980	16.6
Louisiana.....	150,007	46,694	31.1	17,187	11.5	1,129	0.8	16,058	10.7	18,262	12.2	23,970	16.0
Oklahoma.....	179,837	43,128	24.0	28,280	15.7	8,131	4.5	20,149	11.2	23,369	13.0	34,160	19.0
Texas.....	418,002	147,349	35.3	93,577	22.4	14,450	3.5	79,127	18.9	93,474	22.4	120,480	28.8
<i>West South Central</i>	<i>964,370</i>	<i>295,903</i>	<i>30.7</i>	<i>162,479</i>	<i>16.8</i>	<i>25,842</i>	<i>2.7</i>	<i>136,637</i>	<i>14.2</i>	<i>161,131</i>	<i>16.7</i>	<i>214,590</i>	<i>22.3</i>
Montana.....	41,823	10,614	25.4	11,688	27.9	3,741	8.9	7,947	19.0	8,745	20.9	10,550	25.2
Idaho.....	43,663	28,931	66.3	26,384	60.4	945	2.1	25,439	58.3	28,801	66.0	32,170	73.7
Wyoming.....	15,018	4,655	31.0	5,184	34.5	1,710	11.4	3,474	23.1	3,954	26.3	5,070	33.8
Colorado.....	51,436	20,046	39.0	19,735	38.4	4,912	9.6	14,823	28.8	16,648	32.4	21,810	42.4
New Mexico.....	34,105	7,644	22.4	6,554	19.2	2,075	6.1	4,479	13.1	4,834	14.2	6,090	17.9
Arizona.....	18,468	6,577	35.6	6,031	32.7	424	2.3	5,607	30.4	6,191	33.5	6,780	36.7
Utah.....	25,411	18,510	72.8	17,714	69.7	303	1.2	17,411	68.5	18,478	72.7	19,750	77.7
Nevada.....	3,573	1,770	49.5	1,812	50.7	257	7.2	1,555	43.5	1,599	44.8	1,700	47.6
<i>Mountain</i>	<i>233,497</i>	<i>98,747</i>	<i>42.3</i>	<i>95,102</i>	<i>40.7</i>	<i>14,367</i>	<i>6.1</i>	<i>80,735</i>	<i>34.6</i>	<i>89,250</i>	<i>38.2</i>	<i>103,920</i>	<i>44.5</i>
Washington.....	81,686	62,843	76.9	60,082	73.6	1,799	2.2	58,283	71.4	61,885	75.8	67,550	82.7
Oregon.....	61,829	41,245	66.7	38,010	61.5	1,641	2.7	36,369	58.8	39,519	63.9	43,530	70.4
California.....	132,658	113,705	85.7	110,014	82.9	2,110	1.6	107,904	81.3	110,054	83.0	124,200	93.6
<i>Pacific</i>	<i>276,173</i>	<i>217,793</i>	<i>78.9</i>	<i>208,106</i>	<i>75.4</i>	<i>5,550</i>	<i>2.0</i>	<i>202,556</i>	<i>73.3</i>	<i>211,458</i>	<i>76.6</i>	<i>235,280</i>	<i>85.2</i>

The accompanying un-numbered tabulation based on the Census of Agriculture report as of April 1, 1940, 1930 and 1920, shows the relative place of electricity among other farm facilities such as automobiles, telephones, trucks and tractors:

	Electrically Lighted Homes	Automobiles	Telephones	Trucks	Tractors
Number on April 1, 1940.....	2,032,316	3,542,036	1,526,954	944,184	1,409,697
Number on April 1, 1930.....	845,356	3,650,003	2,139,194	845,335	851,457
Number on April 1, 1920.....	452,620*	1,979,564	2,498,493	131,551	229,332

* Electricity or gas.

A page from Farm Service section of the STATISTICAL BULLETIN—THE ELECTRIC LIGHT AND POWER INDUSTRY IN THE UNITED STATES. Published by the Edison Electric Institute.

30% of Passenger Cars on Farms Are 10 Years Old or Older

Number of Passenger Cars in Use on Farms by Year Model

State	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930 & Earlier	No. of Cars Reported by Farms	No. of Cars on Farms	State
Ala.	1,569	3,013	2,430	4,633	4,648	3,696	3,904	1,957	1,583	3,140	14,741	45,314	46,202	Ala.
Ariz.	551	778	724	1,031	1,002	628	481	220	216	354	1,967	7,852	7,925	Ariz.
Ark.	1,829	2,269	3,892	3,131	3,892	3,131	3,187	1,974	1,786	2,884	17,938	45,115	45,865	Ark.
Calif.	5,441	8,542	8,855	14,968	13,653	8,535	5,988	3,578	3,588	5,255	26,752	105,155	106,012	Calif.
Colo.	1,543	2,884	2,592	5,505	5,463	3,191	2,523	1,400	1,056	2,537	11,949	40,643	40,878	Colo.
Conn.	913	1,408	1,195	2,028	1,651	1,168	1,010	733	691	866	2,422	14,085	14,219	Conn.
Dela.	352	577	606	929	817	583	473	305	272	468	1,366	6,748	6,835	Dela.
Fla.	1,202	1,953	1,863	2,611	2,556	1,748	1,912	943	1,088	1,929	6,160	23,965	24,552	Fla.
Ga.	2,273	3,970	3,219	6,393	6,717	5,922	6,444	3,721	3,033	6,497	22,596	70,785	72,140	Ga.
Ida.	1,697	2,333	2,037	4,648	4,689	2,925	2,141	962	736	1,425	8,923	32,516	32,806	Ida.
Ill.	9,105	13,506	13,006	25,414	23,562	15,447	10,002	7,072	5,480	10,663	41,824	175,081	176,138	Ill.
Ind.	6,199	9,546	8,899	21,160	19,787	14,380	9,835	6,239	5,171	8,641	38,132	147,989	149,026	Ind.
Ia.	9,404	16,952	15,225	25,140	24,439	18,479	10,785	5,933	4,834	11,226	48,849	191,266	192,486	Ia.
Kan.	2,848	5,477	6,944	14,996	15,395	11,485	9,101	5,534	4,103	8,015	45,734	129,632	130,231	Kan.
Ky.	2,616	4,721	5,101	8,981	9,132	7,553	6,657	4,219	4,032	3,755	27,640	88,027	88,979	Ky.
La.	1,722	2,714	2,410	3,562	3,955	2,566	2,575	1,377	1,336	1,854	7,562	31,633	32,039	La.
Me.	633	1,302	1,236	2,468	2,407	1,635	1,711	1,009	1,316	2,179	6,552	22,448	22,701	Me.
Md.	1,547	2,279	2,233	3,799	3,649	2,499	2,156	1,381	1,526	2,031	5,925	29,025	29,695	Md.
Mass.	1,029	1,906	1,839	2,983	2,638	1,841	1,635	1,049	962	1,223	2,425	19,530	19,743	Mass.
Mich.	6,919	8,712	7,779	21,659	19,902	13,230	10,327	6,048	5,776	8,766	42,002	151,120	152,922	Mich.
Minn.	2,333	3,638	3,096	5,227	6,176	4,512	4,713	2,546	5,817	13,463	56,034	172,101	172,764	Minn.
Miss.	4,351	7,350	6,805	11,542	13,602	11,004	9,681	7,608	1,994	2,409	15,605	52,249	53,259	Miss.
Mo.	1,466	2,394	1,851	3,304	4,051	3,242	1,918	1,101	6,944	13,335	69,175	161,397	162,640	Mo.
Mont.	2,413	4,971	5,178	9,316	11,020	8,250	5,608	3,804	7,776	8,843	30,239	107,484	107,484	Mont.
Nebr.	147	224	175	323	305	175	138	67	2,868	7,557	46,194	107,199	107,484	Nebr.
Nev.	360	817	688	1,212	1,212	884	841	588	79	117	586	2,336	2,362	Nev.
N. H.	1,158	1,669	1,567	2,694	2,178	1,521	1,340	939	656	905	2,433	10,566	10,801	N. H.
N. J.	896	1,328	1,115	1,658	1,521	1,074	1,043	484	939	1,189	3,138	18,344	18,514	N. J.
N. M.	4,422	7,084	7,461	13,617	13,180	9,384	7,975	6,278	4,426	6,411	3,358	13,545	13,760	N. M.
N. Y.	3,933	7,233	7,573	11,814	10,686	11,787	12,186	5,943	6,464	8,911	27,912	112,688	113,913	N. Y.
N. C.	1,829	2,592	3,152	5,129	4,586	4,910	3,331	2,266	4,492	10,307	30,057	116,011	118,074	N. C.
N. D.	7,642	10,878	10,740	27,566	25,923	17,139	13,479	8,481	7,016	3,750	28,005	61,254	61,418	N. D.
Ohio	2,839	5,038	5,684	9,884	10,796	9,162	8,553	5,774	3,920	6,263	34,157	102,070	102,921	Ohio
Ore.	1,990	3,059	2,770	6,109	6,381	3,391	2,535	1,481	1,498	2,632	16,499	48,345	48,602	Ore.
Penn.	5,284	8,056	8,218	17,089	16,159	10,354	9,397	6,333	6,980	8,086	27,412	123,368	124,784	Penn.
R. I.	103	197	160	310	288	186	154	144	123	161	300	2,126	2,139	R. I.
S. C.	2,136	3,844	2,895	5,304	4,662	4,988	4,988	3,115	2,162	6,801	17,209	58,035	58,807	S. C.
S. D.	1,956	2,950	2,837	5,593	5,810	4,913	3,143	1,916	1,689	4,163	27,297	62,251	62,512	S. D.
Tenn.	3,051	4,909	4,764	8,123	7,985	6,987	6,387	3,474	3,228	5,919	22,700	77,527	78,800	Tenn.
Tex.	9,748	13,760	14,394	23,485	26,452	20,964	20,744	14,178	9,175	15,429	78,021	246,350	248,580	Tex.
Utah	688	1,132	961	2,164	2,201	1,453	996	575	376	700	3,953	15,199	15,352	Utah
Vt.	473	999	895	1,591	1,640	1,281	956	682	946	1,215	4,227	14,905	15,128	Vt.
Va.	3,499	5,694	5,231	8,157	7,755	6,841	5,798	3,239	3,390	5,782	17,955	74,341	75,273	Va.
Wash.	1,974	3,241	2,991	7,548	7,443	4,348	3,463	1,991	1,897	3,338	22,374	60,808	60,870	Wash.
W. Va.	1,082	2,189	2,036	4,001	4,180	2,857	2,619	1,940	1,609	2,334	9,821	34,268	34,888	W. Va.
Wis.	4,622	7,166	8,503	18,483	17,607	13,001	8,478	5,271	5,777	10,645	56,631	156,184	157,087	Wis.
Wyo.	713	1,097	833	1,470	1,497	1,028	664	384	288	558	2,292	10,524	10,889	Wyo.
Total	136,148	217,850	214,599	410,422	405,913	300,553	243,223	151,889	132,436	235,687	1,080,449	3,509,171	3,542,006	Total
Per cent.	3.9	6.2	6.1	11.7	11.6	8.6	6.9	4.3	3.8	6.7	30.2	100%		

SOURCE: U. S. Bureau of Census, April, 1940.

THE FARM MARKET

A FARM MARKET DATA BOOK PREPARED BY COUNTRY GENTLEMAN



A reduced facsimile of the two-color cover of THE FARM MARKET, a farm market data book, prepared by Country Gentleman.

IOWA

Line No.		STATE TOTAL	ADAIR	ADAMS	ALLAMAKEE	APPANOOSE	AUDUBON	BEYTON	BLACK HAWK	
POPULATION—FARMS										
1	Country Gentleman circulation	units	99,525	911	764	1,508	727	711	859	1,327
2	Population—total	number	2,536,268	13,196	10,156	17,184	34,845	11,790	22,879	79,944
3	Rural population	number	1,454,097	13,196	10,156	14,812	15,632	11,790	15,514	18,854
4	% of total population	per cent	57.3	100.0	100.0	82.7	65.5	100.0	67.8	23.6
5	Rural farm families	number	228,354	2,210	1,763	2,226	2,210	1,864	2,736	2,661
6	Number of farms	number	213,318	2,098	1,982	2,088	2,092	1,880	2,490	2,494
7	White farm operators	number	213,191	2,098	1,982	2,088	2,092	1,880	2,490	2,493
VALUES										
8	Land and buildings	dollars	2,690,744,215	19,056,965	14,002,080	16,133,840	9,794,564	21,111,613	45,541,028	33,701,613
9	Average per farm	dollars	12,614	9,074	8,851	7,227	4,848	11,600	18,809	13,513
10	Average per acre	dollars	78.79	33.22	35.12	45.90	31.70	75.25	104.44	99.22
11	Implements and machinery	dollars	242,047,198	1,790,110	1,326,177	1,951,969	862,451	1,812,354	3,661,859	3,249,590
12	Average per farm	dollars	1,134.68	853.25	637.03	954.66	412.26	995.60	1,478.45	1,302.56
EXPENDITURES										
13	Implements and machinery	dollars	45,105,124	300,215	219,507	302,241	159,206	514,695	696,005	649,561
14	Average per farm reporting	dollars	134.12	343.89	379.11	315.82	319.05	377.33	459.45	441.58
15	Gasoline, distillate, kerosene, oil	dollars	21,995,454	147,944	98,637	119,201	48,228	148,474	306,727	290,642
16	Average per farm reporting	dollars	133.90	89.22	107.43	71.51	53.25	98.92	159.92	151.22
17	Building materials	dollars	24,114,867	137,435	95,991	135,537	84,251	161,714	423,375	446,189
18	Average per farm reporting	dollars	216.78	146.99	158.40	119.84	112.04	183.14	274.74	291.25
19	Feed for animals and poultry	dollars	48,942,232	389,465	288,860	172,641	144,246	598,539	745,047	511,621
20	Average per farm reporting	dollars	300.91	258.74	259.90	120.64	130.30	362.45	355.66	255.42
21	Hired labor	dollars	89,300,447	166,807	108,167	209,799	70,434	154,733	443,528	394,512
22	Average per farm reporting	dollars	270.32	181.12	181.18	188.67	154.46	215.51	305.79	285.05
AUTOMOTIVE										
23	Automobiles—farms reporting	number	192,456	1,911	1,405	1,852	1,541	1,686	2,326	2,265
24	% of all farms	per cent	90.2	91.1	88.8	88.7	73.7	92.6	93.4	90.8
25	Number of automobiles	number	236,601	2,183	1,611	2,210	1,653	2,065	3,022	2,873
26	Motor trucks—farms reporting	number	24,947	103	104	147	180	147	180	399
27	% of all farms	per cent	11.7	4.9	6.6	12.9	7.0	8.8	15.5	16.0
28	Number of motor trucks	number	26,352	108	107	280	157	166	412	431
29	Tractors—farms reporting	number	117,932	975	721	806	368	975	1,738	1,573
30	% of all farms	per cent	55.3	46.5	45.6	38.6	17.6	53.6	69.8	63.1
31	Number of tractors	number	128,516	1,021	742	844	389	1,019	1,908	1,710
FARM FACILITIES										
32	Farms with electricity	number	86,786	425	505	528	390	564	1,511	1,751
33	% of all farms	per cent	40.7	20.2	31.9	25.3	18.6	32.1	60.7	70.2
34	Farms with telephone	number	142,091	1,597	1,093	1,495	982	1,512	2,107	1,598
35	% of all farms	per cent	66.6	76.1	69.1	71.6	46.9	72.1	84.6	64.1
36	Farm dwellings needing major repairs	number	55,959	818	152	791	362	134	743	562
37	% of all farm dwellings	per cent	24.6	37.1	7.2	33.9	16.0	7.7	27.3	33.0
38	Farm dwellings with running water	number	48,761	372	275	397	120	610	833	701
39	% of all farm dwellings	per cent	21.4	16.9	15.2	17.0	5.3	35.3	30.6	26.8
40	Farm dwellings with bath	number	31,862	206	150	224	77	257	377	322
41	% of all farm dwellings	per cent	14.0	9.4	8.7	9.6	3.4	14.9	21.2	20.0
42	Farm dwellings with inside toilet	number	35,374	252	177	274	92	322	654	594
43	% of all farm dwellings	per cent	15.2	10.3	9.4	11.6	4.0	16.7	23.0	22.3
ACREAGE										
44	Land area	acres	35,831,040	364,160	272,640	408,960	334,720	286,720	459,520	362,880
45	% in farms	per cent	95.3	98.2	96.7	89.9	91.6	97.9	94.5	87.6
46	Farm land	acres	34,148,673	357,713	263,616	367,505	306,747	280,858	434,131	331,682
47	Average size of farm	acres	160.1	170.5	166.6	176.0	146.6	154.2	174.3	156.2
TENURE—WORK OFF FARM										
48	Farms operated by owners	number	110,616	975	808	1,371	1,358	850	1,248	1,350
49	% of all farms	per cent	51.9	46.4	51.1	65.7	64.9	46.7	50.1	54.1
50	Farm operators living off farm	number	6,500	63	54	78	103	54	54	43
51	Farm operators working off farm	number	38,118	358	365	423	734	329	356	588
52	Average days worked off farm	number	101	79	98	78	108	78	72	141
LIVESTOCK—POULTRY										
53	Horses and mules	number	773,893	8,410	5,576	8,271	6,102	6,999	9,285	6,861
54	Cattle and calves	number	4,213,010	40,421	28,493	48,976	26,612	40,619	87,168	52,162
55	Cows milked	number	1,292,806	10,720	6,985	20,679	8,075	10,180	15,359	20,617
56	Milk produced	gallons	652,729,566	5,214,556	3,444,268	11,024,664	3,167,303	4,518,580	7,869,906	11,610,541
57	Hogs and pigs	number	4,902,446	49,847	41,787	28,163	15,933	38,330	75,115	56,234
58	Sheep and lambs	number	1,203,408	12,479	9,846	40,068	8,147	5,854	5,854	5,197
59	Chickens raised	number	45,405,028	593,148	295,821	330,327	266,071	462,075	835,657	514,449
60	Chicken eggs produced	dozens	168,204,052	1,501,614	1,100,433	1,289,931	1,040,341	2,082,760	2,020,335	1,955,907
CROPS										
61	Cropland harvested	acres	20,076,641	180,914	122,978	141,691	106,390	161,676	280,103	221,205
62	Corn for all purposes	acres	9,330,820	92,929	65,156	44,454	32,568	81,885	122,781	94,377
63	Corn harvested for grain	bushels	469,786,611	3,554,845	2,686,133	2,226,895	1,062,828	3,849,449	7,849,734	5,849,933
64	Wheat threshed	acres	367,830	2,548	4,864	913	953	1,330	801	484
65	Oats threshed and fed unthreshed	acres	6,567,597	29,711	87,100	12,478	8,952	13,725	13,725	8,389
66	Oats threshed	bushels	3,001,159	39,259	54,333	18,998	18,998	36,883	74,503	56,354
67	Barley threshed	acres	156,348,088	587,719	416,093	994,302	299,364	714,729	2,333,601	2,102,144
68	Rye threshed	bushels	505,555	306	332	3,934	68*	10,371	6,764	909
69	All hay	acres	12,449,209	5,946	3,698	97,249	1,168*	159,065	184,166	23,193
70	Sorghums, except for syrup	acres	62,862	541	755	520	185	259	745	847
71	Cotton	acres	943,125	2,429	10,253	6,718	1,244	3,035	10,289	13,266
72	Irish potatoes	bushels	3,548,792	35,634	20,970	50,376	39,371	26,156	33,456	50,763
73	Tobacco	acres	5,051,371	38,313	28,565	61,569	41,162	39,391	84,015	78,261
74	Vegetables harvested for sale	tons	78,158	1,287	1,301	451	507	1,247	227	975
75	Sorghums, except for syrup	acres	-	-	-	-	-	-	-	-
76	Cotton	acres	-	-	-	-	-	-	-	-
77	Irish potatoes	bushels	50,906	408	367	804	147	540	491	517
78	Tobacco	acres	4,702,098	32,697	29,585	60,687	11,790	43,431	50,132	40,959
79	Vegetables harvested for sale	acres	17	-	-	#	-	-	-	-
80	Tobacco	pounds	18,138	7	7	6	5	128	730	545
81	Vegetables harvested for sale	dollars	28,238	475	273	461	450	2,774	19,741	28,190
82	Small fruits	dollars	1,261,868	12	6	63	31	28	51	38
83	Tree fruits, nuts, and grapes	acres	3,759*	239	114	157	178	91	407	371
84	Value of vegetables for home use	dollars	25,239	47,669	33,493	66,548	70,398	32,113	86,220	96,491
85	Value of vegetables for home use	dollars	6,225,295	-	-	-	-	-	-	-

* Seven acres included in the state total are not distributed among the counties as the Census did not publish small fruit acreage of less than 1 acre or for less than 3 farms.

Estimated
Census does not report data for less than 3 farms.

TOMATOES HARVESTED ON FARMS—100 LEADING COUNTIES, 1939 WITH COMPARISONS, 1929

COUNTY AND STATE	ACRES (NUMBER)		RANK		COUNTY AND STATE	ACRES (NUMBER)		RANK	
	1939	1929	1939	1929		1939	1929	1939	1929
UNITED STATES	6,496	.....	.....	.....		
100 counties	.....	.....	.....	.....	
Cameron, Tex.	1	.....	8	.....	Jefferson, Ind.	.....	.....	.....	.....
San Joaquin, Calif.	64	.....	64	.....	St. Louis, Mo.	.....	.....	.....	.....
Hidalgo, Tex.	43	.....	43	.....	Westmoreland, Pa.	.....	.....	.....	.....
Dade, Fla.	2	.....	2	.....	Kent, Md.	.....	.....	.....	.....
Alameda, Calif.	.....	.....	.....	.....	Mercer, N. C.	.....	.....	.....	.....

VALUE OF DOMESTIC ANIMALS ON FARMS—100 LEADING COUNTIES, 1939 WITH COMPARISONS, 1929

COUNTY AND STATE	VALUE (DOLLARS)		RANK		COUNTY AND STATE	VALUE (DOLLARS)		RANK	
	1939	1929	1939	1929		1939	1929	1939	1929
UNITED STATES					
100 counties					
Cherokee, Ala.

CORN HARVESTED FOR GRAIN ON FARMS—100 LEADING COUNTIES IN ACRES WITH PRODUCTION, 1939 AND WITH COMPARISONS, 1929

COUNTY AND STATE	ACRES (NUMBER)		RANK		COUNTY AND STATE	PRODUCTION (BUCKETS)		RANK	
	1939	1929	1939	1929		1939	1929	1939	1929
UNITED STATES	77,431,592	.....	.....	.....		
100 counties	.....	.....	.....	.....	
Wheat, Ill.	12,752,044	.....	.....	.....	.....	.....	.....	.....	.....

Sixteenth Census of the United States: 1940

U. S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
Washington

Series Agr. R-8

AGRICULTURE

This is one of a series of reports showing the rank of the leading counties of the United States in agriculture and agricultural products as reported in the most recent census.