

---

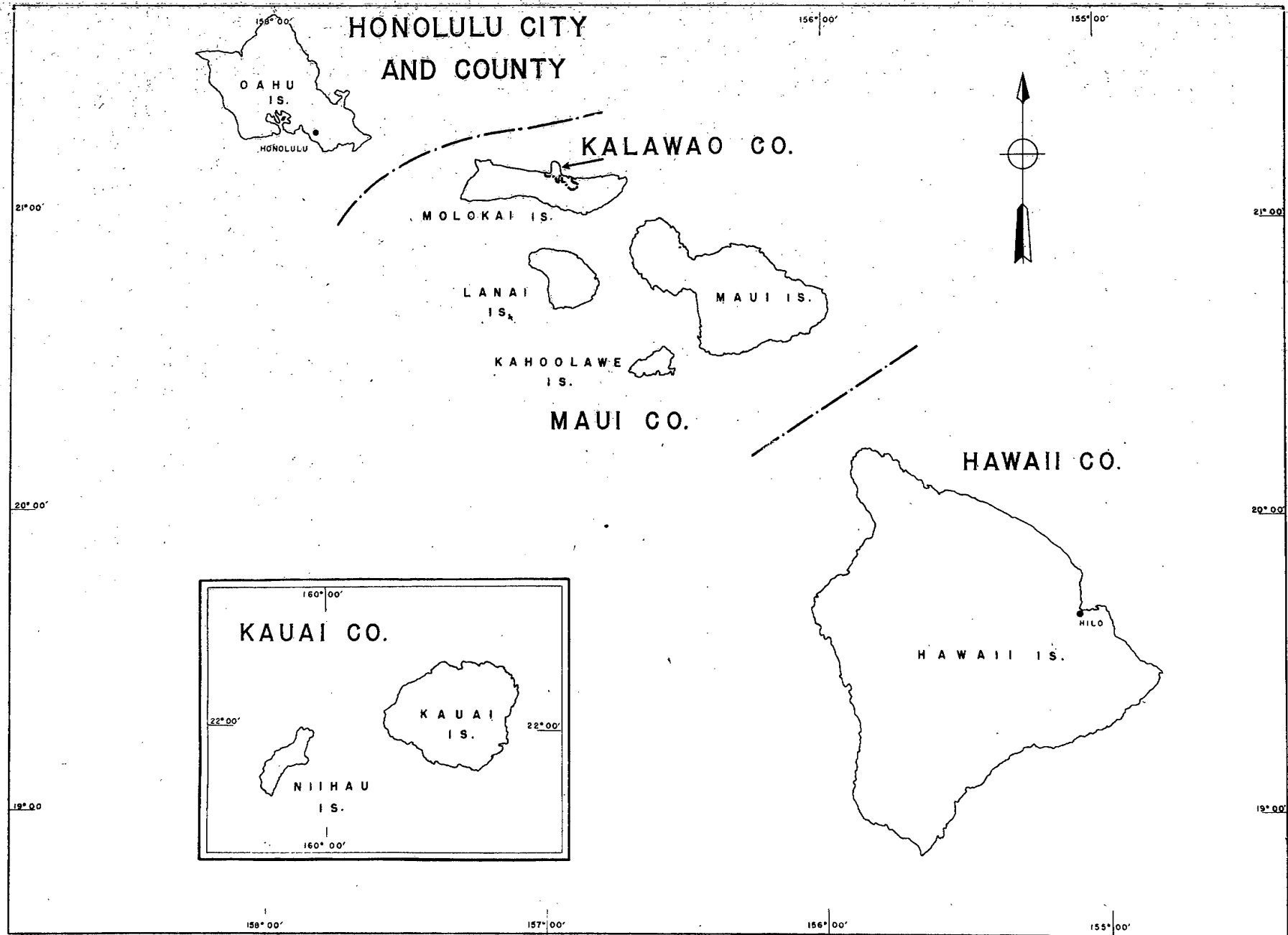
HAWAII

---

# CONTENTS

	Page		Page
Map-----	53	Hogs and pigs-----	58
Introduction-----	54	Poultry-----	58
History of Census of Agriculture-----	54	Miscellaneous poultry-----	58
Legal basis for the 1940 Census-----	54	Farm slaughter and purchases and sales of livestock-----	58
Method of canvass and tabulation-----	54	Bees and honey-----	58
Presentation of statistics-----	54	Crops-----	58
Comparability of data-----	54	Vegetables-----	58
Definitions and explanations-----	54	Horticultural specialties-----	58
A farm-----	54	Fruits, coffee, and nuts-----	58
Farm operator-----	54	Value of farm products sold, traded, or used by farm households-----	58
Race of operator-----	54	Unclassified farms-----	58
Tenure of operator-----	55	Farms reporting total value of farm products sold, traded, or used by farm households-----	58
Farms reporting-----	55	Field crops-----	58
Land area-----	55	Vegetables for sale-----	58
Land in farms-----	55	Fruit, coffee, and nut crops-----	58
Farms and farm acreage classified by size of farm-----	55	Horticultural specialties-----	58
Incorporated farms-----	55	Dairy products-----	58
Farm values-----	55	Livestock-----	58
Farm mortgage debt-----	56	Poultry and poultry products-----	58
Work off farm-----	56	Other livestock products-----	58
Age of operator-----	56	Farm products used by farm households-----	58
Year of occupancy-----	56	Farms classified by major source of income-----	58
Farm labor-----	56	Farms classified by total value of products-----	58
Farm expenditures-----	56	Interpretation of the value of product statistics-----	58
Farm machinery and facilities-----	56	Unclassified farms-----	58
Livestock and livestock products-----	57	Net income-----	58
Age, sex, and other groups enumerated for various classes of livestock, 1940, with approximately comparable groups, 1900 to 1930-----	57	Nonagricultural income-----	58
Goats and kids-----	58		
TERRITORIAL TABLES:			
1.—Farms and farm acreage, by race and by tenure of operator, and by size of farm: 1900 to 1940-----			60
2.—Value of farms, by race and by tenure of operator, and value of buildings and implements and machinery, by tenure: 1900 to 1940-----			61
3.—Mortgaged farms operated by full owners and part owners, classified by race of farm operator and interest rate, 1940-----			61
4.—Work off farm for pay or income, by race and by tenure of operator, 1939-----			63
5.—Age of farm operators by race and by tenure of operator, 1940-----			63
6.—Year of occupancy, by race and by tenure of farm operator, 1940-----			63
7.—Specified farm machinery and facilities, 1940; farm labor for a specified week of 1939 and 1940; farm expenditures, 1939; and by race and by tenure of farm operator-----			64
8.—Specified classes of livestock on farms, 1900 to 1940; and livestock products, 1899 to 1939-----			65
9.—Specified crops—Farms reporting, acreage, and production: 1899 to 1939-----			65
10.—Farms reporting and value of farm products sold, traded, or used by farm households, classified by major source of income, 1939-----			66
11.—Farms reporting and value of farm products sold, traded, or used by farm households, classified by size of total value of farm products, 1939-----			68
COUNTY TABLES:			
I.—Farms, farm acreage, and value, 1940, 1930, and 1920; farm land according to use, 1939 and 1929; and value of buildings and implements and machinery, 1940 and 1930-----			70
II.—Farms, 1940 and 1930; farm acreage, and value of land and buildings, 1940 and 1930; value of buildings and implements and machinery, 1940; and cropland harvested, 1939; by tenure and race of operator-----			71
III.—Number of farms, 1940 and 1930; farm acreage and specified values, 1940; and cropland harvested, 1939; by size of farm-----			77
IV.—Farm mortgage debt of full owners and part owners, Apr. 1, 1940-----			76
V.—Work off farm, 1939; and age and year of occupancy, Apr. 1, 1940-----			78
VI.—Farm labor for a specified week of 1939 and of 1940; farm expenditures, 1939; and farm machinery and facilities, Apr. 1, 1940-----			79
VII.—Farms, farm acreage, value of land and buildings and number of dwellings, automobiles, motortrucks, and tractors, 1940; and cropland harvested and irrigated land, 1939; for incorporated farms-----			79
VIII.—Specified classes of livestock on farms and ranches, Apr. 1, 1940 and 1930; and specified livestock products, 1939 and 1929-----			80
IX.—Specified poultry on hand, Apr. 1, 1940 and 1930; chicken eggs produced and specified poultry raised, 1939 and 1929; chickens sold, 1939; bees on hand, Apr. 1, 1940, and honey produced, 1939; and farm slaughter, and purchases and sales of livestock, 1939-----			81
X.—Acreage and quantity of crops harvested in 1939 and 1929-----			82
XI.—Vegetables harvested for sale, 1939 and 1929; and horticultural specialties, 1939-----			83
XII.—Land in tree fruits, pineapples, coffee, nuts, and grapes, 1940; citrus, other fruit, and nut trees and grapevines, 1940 and 1930, with production, 1939-----			84
XIII.—Value of farm products sold, traded, or used by farm households with percentage of farms reporting and percent distribution of value of products, by source of income, 1939-----			86
XIV.—Farms reporting and value of farm products sold, traded, or used by farm households, classified by major source of income, 1939-----			87
XV.—Farms reporting and value of farm products sold, traded, or used by farm households, classified by total value of products, 1939-----			91
APPENDIX			
Schedules, 1940 and earlier censuses-----			93

# HAWAII



# CENSUS OF AGRICULTURE: 1940

## INTRODUCTION

The compilation of these statistics and the preparation of this report were made under the supervision of Zellmer R. Pettet, Chief Statistician for Agriculture, assisted by Ray Hurley, Principal Statistician in Charge of Analysis.

**History of Census of Agriculture.**—The first Census of Agriculture in Hawaii was taken by the United States in 1900 in connection with the Twelfth Decennial Census of Population. Since that time, a census of agriculture has always been taken in conjunction with the census of population in each decennial enumeration.

**Legal basis for the 1940 Census.**—Provision for the 1940 Census was made in the Act providing for the Fifteenth Decennial Census which was approved on June 18, 1929. In part this Act provided, "That a census of population, agriculture, irrigation, drainage, distribution, unemployment, and mines shall be taken by the Director of the Census in the year 1930 and every ten years thereafter. The census herein provided for shall include each State, the District of Columbia, Alaska, Hawaii, and Puerto Rico".

**Method of canvass and tabulation.**—In the 1940 Census of Agriculture, as for each agricultural census taken by the United States in Hawaii, a separate schedule was required for every farm, ranch, and plantation. The data, therefore, are the results obtained from a tabulation of the information given by farm operators to census enumerators in a personal canvass of the individual farms, ranches, and plantations.

After the schedules were received in Washington and examined for accuracy and completeness, the figures were transferred to punch cards. By means of mechanical equipment the totals for geographic and political areas were obtained.

**Presentation of statistics.**—This bulletin contains the available results of the 1940 enumeration of agriculture. The statistics herein, in the main, relate to the number, acreage, and value of farms; the value of buildings and of implements and machinery on farms; farm land classified according to its utilization; age of farm operator; work off the farm for pay or income; years on farm; mortgage debt on owner-operated farms; farm labor; selected farm expenditures; age and inventory of automobiles, motortrucks, and tractors on farms; farms reporting and numbers of specified classes of livestock and poultry with some of their products; farms reporting with the acreage and production of specified crops harvested; acreage and value of vegetables harvested for sale; number of trees and production of fruits and nuts; the value of farm products sold, traded, or used by farm households; and farms classified by major source of income.

In this bulletin, summary tables containing totals for the Territory only are presented and these are followed by tables in which county figures, as well as totals for the Territory are shown. For those items appearing in the Territorial tables, all available comparative data are presented for each census beginning with 1900. In the county tables, in addition to the data for 1940, comparative figures are presented for most of the items from the Census of 1930. The information obtained from inquiries in former census years which were not a part of the agriculture schedule for 1940 is usually omitted from both Territorial and county tables.

In using the statistics in this bulletin attention is called to the fact that information for some of the items appears only in the county tables and is not shown in the Territorial tables. Likewise, data for some items are given only in the Territorial tables without corresponding figures being shown by counties.

**Comparability of data.**—The Agriculture Census of 1940, in accordance with the law providing for the census, was taken as of April 1, 1940; consequently all inventory items relate

to that date. Crop and livestock productions, unless specifically stated otherwise, are for the calendar year 1939. Likewise, for other years the inventory items relate to the date of the census and the production items to the preceding calendar year. Since the date of the census has varied, affecting the comparability of the data for some items more than for others, the date of the enumeration or the year of production is usually indicated in the table and the user of the statistics should consider the difference in enumeration dates when comparing the figures for one year with those for another.

## DEFINITIONS AND EXPLANATIONS

A facsimile of the schedule used in 1940 is shown at the end of this bulletin. Only those items which need clarification or for which explanations are deemed necessary as to their comparability are discussed.

**A farm.**—The schedule form for 1940 was entitled General Schedule for Farms, Ranches, and Plantations. The following definition appeared on the reverse side of the schedule:

**DEFINITION OF "FARM."**—A farm, for Census purposes, consists of one or more tracts of land (not necessarily adjoining) on which some agricultural operations are performed or supervised by one person, either alone or with the assistance of members of his household or of hired employees. The land operated by a partnership is likewise treated as a farm. If a farm consists of two or more tracts of land, these may be held under different tenures, as when one tract is owned by the farmer and another tract is rented by him. When a landowner has one or more tenants, renters, croppers, or managers, the land operated by each is treated as a farm. Thus on a plantation the land operated by each cropper, renter, or tenant should be reported as a separate farm, and the land operated by the owner or the manager by means of wage hands should likewise be reported as a separate farm. Do not report as a farm any tract of land of less than 3 acres, unless its agricultural products in 1939 were valued at \$150 or more.

In the enumerators' handbook the following instruction was given:

The definition of "farm" appearing on the back of the schedule must be carefully studied by the enumerator. Note that for tracts of land of 3 acres or more the \$150 limitation in Hawaii for value of agricultural products does not apply, but that reports are to be made for such tracts only when some agricultural operations have been performed thereon since the beginning of 1939 or are in prospect before the close of 1940. A schedule should be filled out for each farm, ranch, plantation, or other enterprise that meets, or that might possibly meet, the minimum requirements of the definition. When in doubt, always fill out a schedule.

Farming or agricultural operations consist of the production of crops or of the care and maintenance of livestock for animal products, animal increase, or value enhancement. "Livestock," as the term is here used, covers poultry of all kinds, rabbits, and bees, in addition to horses, mules, asses, burros, cattle, carabaos, sheep, goats, and hogs. Some activities that are covered by the census are not generally recognized as farming. This is especially true where no crops are grown, or where the enterprises are not commonly considered as farms.

A partial list of types of specialized agriculture and of operations not generally recognized as farming but for which Farm, Ranch, and Plantation Schedules were required was provided for census enumerators. This list included such operations as nurseries, greenhouses, bee farms, hatcheries, etc.

**Farm operator.**—A "farm operator," according to the Census definition, is a person who operates a farm, either performing the labor himself or directly supervising it. For all practical purposes, the number of farm operators is identical with the number of farms.

**Race of operator.**—Farm operators are classified by race. The races shown for the classification by race are not based strictly on race but, in a large part, on country of origin of the operator and are usually considered racial groups in the organization of statistical material for the Territory of Hawaii.

Separate data are given for the following racial groups:

1. Caucasian—In this group are included all the farm operators of pure (white) Caucasian blood and includes those whose country of origin was the United States, Germany, Russia, Scotland, Portugal, and other European countries.

- |                  |                           |
|------------------|---------------------------|
| 2. Chinese       | 6. Japanese               |
| 3. Filipino      | 7. Puerto Rican           |
| 4. Hawaiian      | 8. Korean                 |
| 5. Part-Hawaiian | 9. Other, including Negro |

**Tenure of operator.**—Farm operators are also classified according to the tenure under which they operate their farms:

Full owners own all the land they operate.

Part owners own a part and rent from others the rest of the land they operate.

Managers operate farms for others and receive wages or salaries for their services. Persons acting merely as caretakers or hired as laborers are not classified as managers.

Tenants operate hired or rented land only.

**Farms reporting.**—The term "farms reporting," as used in the tables, indicates the number of farms for which the specified items shown in the particular table were reported. If there were 1,922 farms in a county and only 1,465 of these had chickens on hand over 4 months old, April 1, 1940, and the enumeration of that item was complete, the number of farms reporting chickens for that year would be 1,465.

**Land area.**—The approximate land areas reported for the Territory and for the counties, for 1940 represent redeterminations by the Bureau of the Census and therefore may be at variance with those published in earlier Census Reports even though the county boundaries may not have been changed. The area for 1940 includes only land area while the figures shown for previous censuses relate to gross area. The area for 1940 does not include Midway Island while the area given for previous censuses includes the area of this Island. The measurements involved geodetic values and planimeter readings, and the latest and most authentic maps to be secured from public and private sources were used.

**Land in farms.**—The acreage designated as "All land in farms" includes considerable areas of land not actually under cultivation and some land not even used for pasture or grazing, but all such land must have been under the control of the operator and considered a part of his farm. Land neither owned nor leased but from which crops were harvested was to be reported as part of the farm.

In 1940, data were secured for 10 classes of land based upon the use made of the land in 1939, as follows:

1. Cropland harvested.—The land from which cultivated crops were harvested; lands from which sugarcane was cut and pineapple harvested; and land in orchards, vineyards, nurseries, and greenhouses. Where two or more crops were harvested in 1939 from the same acreage, such acreage was included only once in the acreage for cropland harvested. However, the acreage and the quantity of each individual crop were reported separately as crops harvested. Thus, in some counties the total of the acreage of crops may greatly exceed the acreage designated as cropland harvested.

2. Cropland for future harvest.—Land from which no crop was harvested in 1939, but which was occupied by crops such as sugarcane, pineapples, fruit groves, nursery stock, coffee trees, etc., for harvest after 1939. Land from which a crop was harvested in 1939, but later planted to a crop for future harvest was not to be included. For example, land from which sugarcane was harvested during June, July, or August, and planted again immediately, or later, in sugarcane was not reported as land for future harvest but as cropland harvested. Also, land on which the crops, intended for harvest in 1939, failed and on which crops were planted for future harvest was to be excluded under this question and was to be reported under "Crop failure."

3. Crop failure.—The land from which no crop was harvested in 1939 because of destruction by storms, drought, floods, insects, disease, or from any cause, or failure to harvest because of low prices or lack of labor or quota restrictions. If a crop was harvested, even though the yield was very low, the land from which the crop was actually harvested was included in the acreage for cropland harvested, not crop failure.

The acreage designated as crop failure does not represent the entire acreage of crops which failed, but only that acreage of land in crops that failed, and which was not successfully replanted to a crop that was harvested in 1939.

4. Cropland idle or fallow.—Cropland which was lying idle or which was in cultivated summer fallow; or land on which crops were planted exclusively for soil improvement or the prevention of erosion, and which was not pastured, or from which no crop of any kind was harvested in 1939.

5. Plowable pasture.—Land used only for pasture in 1939 which could have been used for crops without additional clearing, draining, or irrigating. Only pasture land that had been plowed within the last 10 years was to be reported as plowable pasture. (Land from which a crop was harvested in 1939 but which was later used for pasture was included under cropland harvested rather than under pasture land.)

6. Woodland and brushland used for pasture.—Land in trees and brush used for pasture in 1939. This includes considerable areas in kiawe and algaroba trees used for pasture.

7. Other land used for pasture.—This classification includes pasture land other than plowable and woodland pasture.

8. Woodland not used for pasture.—This includes woodland and brushland on farms, ranches, and plantations, not used for pasture. Considerable areas of this woodland are used for water conservation.

9. Wasteland.—Land covered by lava flows, unusable hill-sides, land too arid for pasture, etc.

10. All other land.—Includes land occupied by buildings, roads, irrigation ditches and canals, etc.

This is the first census in which the above land classification was used. Consequently, comparable data for the various classes of land for prior censuses do not exist.

In addition to the 10 classes of land separate data are shown for the following classes of land, which represent part of one or more of the above 10 classes of land:

Land in preparation for planting, April 1, 1940.—Land reported in preparation for planting has been further classified as either: (1) Previously under cultivation, or as (2) not previously under cultivation. Land in preparation for planting and previously under cultivation may have been reported on the basis of use in 1939 as cropland harvested, crop failure, future harvest, cropland idle, or plowable pasture. Land in preparation for planting and not previously under cultivation may have been reported as woodland pasture, other pasture, woodland not pastured, or all other land.

Irrigated land.—Includes all land irrigated in 1939. Crops were harvested from part of the land and this area has been designated "irrigated cropland harvested." The acreage figures reported for irrigated cropland harvested are included in the acreages shown for total cropland harvested. Part of the irrigated land was occupied by crops for future harvest and some of it was used exclusively for pasture.

**Farms and farm acreage classified by size of farm.**—The grouping of farms and farm land by size was made upon the basis of the total acreage in the farm.

**Incorporated farms.**—These include farms, ranches, and plantations owned by corporations which were incorporated under the laws of some State or Territory of the United States, or of some foreign country. The incorporated farms are operated by managers.

Number of dwellings on incorporated farms.—The number of dwellings reported represents the number of dwelling units only on farms reported as incorporated. The dwellings include not only those occupied by the farm operator but also by laborers and others living on the farm, ranch, or plantation.

**Farm values.**—The enumerators were instructed to obtain from each farm operator the total value of the farm (land and buildings). This total value was to be the amount for which the farm would sell. However, the value of plantations comprises a large part of the value of all farms in Hawaii and as these large plantations, under the existing system of land tenure, are seldom if ever sold, the values reported represent in most cases book values or assessed values. Many of the plantations have large irrigation systems with extensive canal systems, forested water sheds, etc., and undoubtedly the value of these improvements has been included in the value of the

plantations. Also, the farm, ranch, and plantation area includes considerable areas of land leased from the Government of the Territory of Hawaii. As these territorially owned lands are not usually sold, it was necessary for the census enumerators to estimate their values. The value of sugarcane, pineapple, and other perennial crops for future harvest has been included in the total value of the farm.

The operator was also asked to give the value of all farm buildings on the farm. These values were necessarily the nearest approximation the farm operator could give, and the figures obtained are probably somewhat less satisfactory than the figures for the total real-estate value. Therefore, the value of the buildings should not be subtracted from the total value of the farm and the difference assumed to represent accurately the market value of the land alone.

The value of the operator's dwelling house represents the value of the building used by the operator of the farm as a dwelling. In case the operator's dwelling was not located upon the farm, ranch, or plantation, but elsewhere, no value was to be reported.

Finally, the operator was asked to place a value on the farm implements and machinery used in operating the farm, ranch, or plantation. This was to represent the present market value and was to include not only the farm implements but also the tools, automobiles, tractors, motortrucks, trailers, wagons, harnesses, dairy equipment, and all other farm machinery. However, plantations own a major part of all farm machinery and equipment in Hawaii. The reported value for farm machinery and equipment for plantations usually represents the book rather than the market value, and includes considerable amounts of equipment, especially on sugarcane plantations and on irrigated farms, not usually found on other types of farms.

**Farm mortgage debt.**—The farm mortgage inquiries on the 1940 Farm, Ranch, and Plantation Schedule were to be answered by operating owners only. Tenants and managers, in many cases, would not know whether the farms they were operating were mortgaged and would be even less likely to know the amount of the mortgage and the contract rate of interest. The inquiries read as follows:

Was there outstanding on April 1, 1940, any mortgage debt on the land and/or buildings of this farm owned by you?----- (Yes or No)

How many acres were covered by mortgage?-----

Total amount of such mortgage, including interest past-due and unpaid-----\$

What was the annual rate (contract rate) of interest on the first mortgage debt?----- (Percent).

The mortgage information given herein for part owners (operating owners who rented some land from others) relates only to the portion of the farm owned by them, and, as for tenants, no attempt was made to secure the facts as to debt on the rented land. As noted in the questions above, the annual interest rate should represent the contract rate on the first mortgage debt. Instructions were given to the enumerator that the rate should be the one specified in the first mortgage.

In county table IV, figures are given for an item labeled "Average rate of interest." These figures represent weighted averages.

**Work off farm.**—Many operators of farms obtain additional income from personal services performed off their farms. In some cases the operator supplements his farm income with odd or spare time jobs on sugarcane plantations, pineapple canneries, etc.; in many other cases his farming activities are only secondary, his off-farm job being his principal source of income. The inquiry carried on the General Farm and Ranch Schedule ascertained the number of days the operator worked off his farm for pay or income and, of these days, the number spent (a) on another farm, ranch, or plantation, where he was employed by someone else and (b) at jobs, businesses, or professions not connected with any farm. Instructions were given to the enumerators that this question was intended to secure a record of all time spent off the farm in 1939 for pay, income, or profit. Work of the operator in connection with a filling station, garage, pineapple cannery, or other nonfarm business conducted at the farm was considered as work off the farm and

should have been reported under section "b" of the question. An effort was made to get a positive report as to off-farm work from every operator. If there was no off-farm work, an answer of "None" was to be supplied. However, the enumerator could not always supply an answer to this question.

**Age of operator.**—Farm operators have been classified by age and the absolute figures for six age groups are shown, by tenure and race of operator, in Territorial table 5; some averages are also given in this table. These averages were obtained by making a summation of the ages reported by all operators for a given tenure and race group and dividing this total by the number of operators reporting their age for that group.

**Year of occupancy.**—The question on the 1940 schedule, "Year when operator began to operate this farm....(Year)," reflects, in part, the stability or instability of operators on a particular farm. No account was taken as to whether the operator had ever had previous farm experience; for example, if an operator began operating his farm in 1940, it may have been the first time he was ever gainfully employed and not that he was unstable in his term of occupancy and had moved recently from another farm. In making comparison between the tenure classes as to the length of time the operators had been on their farms, it is well to consider the average age of the operators in the same tenure classes. In Territorial table 6, averages are presented for operators classified by race and tenure, and in county table V averages are presented for operators classified by tenure. These averages were obtained by making a summation of all years reported for a given class and dividing the total by the total number of operators reporting for that class. The resulting quotient was shown as a whole number; for example, when the average came to something in excess of 1928 but not as much as 1929, the average year would be shown in the table as 1928.

**Farm labor.**—Many and insistent demands produced the labor inquiry which comprised a part of the agricultural schedule for 1940. Several types of information were desired. Some persons wished to secure data which would show the varying supply and demand for labor at various seasons of the year. Others wished to obtain similar information by the type of labor hired, that is, whether hired or available for hire by the month, day, or on a piece work or contract basis. The amount paid for various classes of labor was also wanted.

In presenting the data, the cash expenditures for labor have been listed along with other farm expenditures. It should be noted that the expenditures for farm labor represent the amounts paid in cash and includes the amount paid for farm managers and other supervisory employees working on the farm, ranch, or plantation. For certain types of labor, cash payments are often supplemented with the furnishing of board, housing, electricity, products of the farm for the use of the laborer's family, or feed and pasturage for animals.

**Farm expenditures.**—As noted in the foregoing paragraph under farm labor, the inquiry for that item specified expenditures in cash. For all other expenditures, it was pointed out in the instructions to enumerators that cash paid out and other obligations incurred during 1939 for all specified goods and services used on the farm should be included. In the case of a tenant-operated farm, contributions made by the landlord, as well as those made by the tenant operator, were to be included.

The inquiry for the amount expended for feed for livestock and poultry included also expenses for salt, condiments, and mineral supplements. Expenditures for manure and fertilizer included also expenses for liming materials.

**Farm machinery and facilities.**—In 1940, an inventory record was made for the number of automobiles, motortrucks, and tractors on each farm. The enumerator was cautioned to include automobiles owned by employees living on the farm, ranch, or plantation. For each of these three general classes of equipment, the year of latest model on the farm was to be recorded. The number of farms reporting each model is presented by tenure of operator and by individual year of model beginning with the most recent model and extending to those approximately 10 years of age. For all older models the number of farms reporting is shown in one group. Such data are presented in Territorial table 7. In county table VI the year of latest model is given for two 5-year groups and for a third group in which all older models fall.

# CENSUS OF AGRICULTURE: 1940

57

**Livestock and livestock products.**—For convenience, the term "livestock" in the Census Reports is made to include not only domestic animals such as horses, mules, carabaos, cattle, swine, sheep, and goats, but also poultry and bees. It follows, then, that the term "livestock products" should include production from the above classes of livestock.

In making comparisons between the various census years for any particular class of livestock shown in the accompanying tables, several points should be kept in mind, two of which are:

(1) It is characteristic for some classes of livestock to change in numbers between years through rather definite cycles, i. e., from a low point to a high point and back again over a period of years. These cycles often follow price changes. A census taken every 10 years might fall at different points of the cycle and thus interfere with the determination of long-time trends. Cyclical changes have an effect on the volume of production of livestock products.

(2) A variation in the months of enumeration affects the comparability of the statistics for most kinds of livestock,

again making it difficult to determine the trend in numbers between census periods. As noted in the livestock tables, the 1940 and 1930 censuses were taken as of April 1; the 1920 census as of January 1; the 1910 census as of April 15; and the 1900 census as of June 1. In the period from January 1 to April 1 (or April 15 or June 1) changes are taking place in the numbers of each class of livestock because of decreases from farm slaughter, deaths, and marketings during this three-month, or longer, period and due to increases resulting from births and purchases. The net effect of these influences cannot be readily appraised.

The inquiries for 1940 were so worded that, when considering young animals and poultry, inclusions were made for colts and calves over 3 months of age, pigs and kids (goat) over 4 months of age, lambs over 6 months of age, and poultry over 4 months of age, on the date of the census. Because of the varying age groups included in the different census years, a tabulation appears as a part of this text presentation showing to what age groups the numerical data refer. The tabulation is confined to the material appearing as part of this bulletin.

AGE, SEX, AND OTHER GROUPS ENUMERATED FOR VARIOUS CLASSES OF LIVESTOCK, 1940, WITH APPROXIMATELY COMPARABLE GROUPS, 1900 TO 1930

ITEM	1940 (April 1)	1930 (April 1)	1920 (January 1)	1910 (April 15)	1900 (June 1)
Horses and colts—	farms reporting—Over 3 mo. old.	All ages.	All ages.	All ages.	All ages.
	number—Over 3 mo. old.	All ages.	All ages.	Over 3 1/2 mo. old.	All ages.
Colts—	farms reporting—3 to 39 mo. old.	(1)	(1)	(1)	(1)
	number—3 to 39 mo. old.	(1)	Under 2 yr.	(1)	Under 2 yr.
Mules, asses, and burros—	farms reporting—Over 3 mo. old.	(1)	(1)	(1)	(1)
	number—Over 3 mo. old.	All ages.	All ages.	All ages.	All ages.
Colts—	farms reporting—3 to 39 mo. old.	(1)	(1)	(1)	(1)
	number—3 to 39 mo. old.	(1)	(1)	(1)	(1)
Carabaos—	farms reporting—All ages.	All ages.	All ages.	Age not specified.	(1)
	number—All ages.	All ages.	All ages.	Age not specified.	(1)
Cattle and calves—	farms reporting—Over 3 mo. old.	(1)	All ages.	All ages.	All ages.
	number—Over 3 mo. old.	All ages.	All ages.	Over 3 1/2 mo. old.	1 yr. old and over.
Steers and bulls—	farms reporting—Over 3 mo. old.	(1)	(1)	(1)	(1)
	number—Over 3 mo. old.	(1)	1 yr. old and over.	Over 3 1/2 mo. old.	1 yr. old and over.
Cows and heifers—	farms reporting—Over 27 mo. old.	(1)	(1)	(1)	(1)
	number—Over 27 mo. old.	(1)	2 yr. old and over.	Over 15 1/2 mo. old.	2 yr. old and over.
Kept for milk production—	farms reporting—Over 27 mo. old.	2 yr. old and over.	2 yr. old and over.	Over 15 1/2 mo. old.	2 yr. old and over.
	number—Over 27 mo. old.	2 yr. old and over.	2 yr. old and over.	Over 15 1/2 mo. old.	2 yr. old and over.
Kept for beef production—	farms reporting—Over 27 mo. old.	(1)	2 yr. old and over.	Over 15 1/2 mo. old.	2 yr. old and over.
	number—Over 27 mo. old.	(1)	2 yr. old and over.	Over 15 1/2 mo. old.	2 yr. old and over.
Hogs and pigs—	farms reporting—Over 4 mo. old.	All ages.	All ages.	Over 3 1/2 mo. old.	All ages.
	number—Over 4 mo. old.	All ages.	All ages.	Over 3 1/2 mo. old.	All ages.
Stags and gilts—	farms reporting—Farrowing between Dec. 1, 1939 and June 1, 1940.	(1)	For breeding purposes, 6 mo. old and over.	(1)	(1)
	number—Farrowing between Dec. 1, 1939 and June 1, 1940.	(1)	For breeding purposes, 6 mo. old and over.	(1)	(1)
Sheep and lambs—	farms reporting—Over 6 mo. old.	All ages.	All ages.	All ages.	All ages.
	number—Over 6 mo. old.	All ages.	All ages.	Over 3 1/2 mo. old.	1 yr. old and over.
Ewes—	farms reporting—(1)	(1)	1 yr. old and over.	Over 3 1/2 mo. old.	(1)
	number—Over 6 mo. old.	(1)	1 yr. old and over.	Over 3 1/2 mo. old.	1 yr. old and over.
Yearling ewes—	farms reporting—6 - 18 mo. old.	(1)	(1)	(1)	(1)
	number—6 - 18 mo. old.	(1)	(1)	(1)	(1)
Other ewes—	farms reporting—Over 18 mo. old.	(1)	(1)	(1)	(1)
	number—Over 18 mo. old.	(1)	(1)	(1)	(1)
Goats and kids—	farms reporting—Over 4 mo. old.	All ages.	All ages.	All ages.	All ages.
	number—Over 4 mo. old.	All ages.	All ages.	All ages.	All ages.
Angora—	farms reporting—Over 4 mo. old.	(1)	(1)	(1)	(1)
	number—Over 4 mo. old.	(1)	(1)	(1)	(1)
Other—	farms reporting—Over 4 mo. old.	(1)	(1)	(1)	(1)
	number—Over 4 mo. old.	(1)	(1)	(1)	(1)
Chickens—	farms reporting—Over 4 mo. old.	Age not specified.	Age not specified.	Over 3 mo. old.	(1)
	number—Over 4 mo. old.	Age not specified.	Age not specified.	Over 3 mo. old.	Over 3 mo. old (includes guineas).
Turkeys—	farms reporting—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	(1)
	number—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	Over 3 mo. old.
Ducks—	farms reporting—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	(1)
	number—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	Over 3 mo. old.
Geese—	farms reporting—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	(1)
	number—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	Over 3 mo. old.
Guineas—	farms reporting—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	(1)
	number—Over 4 mo. old.	(1)	Age not specified.	Over 3 mo. old.	Included with chickens.
Bees—	farms reporting—(1)	Hives.	Hives.	Hives.	Hives.
	number—Hives.	Hives.	Hives.	Hives.	Hives.
Owned by operator—	farms reporting—Hives on operator's farm and on non-farm land.	(1)	(1)	(1)	(1)
	number—Hives on operator's farm and on non-farm land.	(1)	(1)	(1)	(1)
Owned by others—	farms reporting—Hives on operator's farm.	(1)	(1)	(1)	(1)
	number—Hives on operator's farm.	(1)	(1)	(1)	(1)

1 Not available.

In theory, a change in the date of the enumeration should have little effect on the volume of production of livestock products reported for the previous calendar year. However, experience indicates that, when accurate records of production are not kept, daily production of milk and of eggs at the time of the enumeration does affect the total volume reported for a year.

**Goats and kids.**—The inquiries for goats in 1940 first required a total for those over 4 months of age and then a separation into "Angoras" and "Other." No Angoras and no mohair were reported.

**Hogs and pigs.**—In 1940, the inventory of hogs and pigs on hand excluded those born after December 1, 1939. The census of 1910 enumerated all hogs and pigs over 3 1/2 months of age with a separate inquiry for those under 3 1/2 months of age. However, for comparative purposes, the data presented in Territorial table 8 for this earlier census excludes those under 3 1/2 months of age. Data for all other censuses are for hogs and pigs of all ages as enumerated.

**Poultry.**—To be counted in 1940, all poultry on hand on the census date had to be over 4 months of age. The censuses of 1930 and 1920, enumerated fowls of all ages and the census of 1910, taken on April 15, limited the inventory of all fowls to those over 3 months of age.

**Miscellaneous poultry.**—Separate inquiries were carried on the 1940 General Farm, Ranch, and Plantation Schedule for chickens, turkeys, and ducks. Another inquiry was provided for other classes of poultry. The names of other classes of poultry were to be given along with the numbers on hand over 4 months old on April 1, 1940, and the numbers raised in 1939.

**Farm slaughter and purchases and sales of livestock.**—Data are shown for four separate kinds of animals butchered, namely, cattle, excluding calves; calves; hogs and pigs; and sheep and lambs. Animals butchered off the farm on a custom basis, or otherwise, for use on the farm were to be reported by the operator of the farm for which the animals were butchered.

For purchases and sales, data are shown in county table IX only, for four specific classes of animals, namely, cattle, excluding calves; calves; hogs and pigs; and sheep and lambs. Data are also presented therein for the farms reporting the purchase or sale of cattle and/or calves.

**Bees and honey.**—Beekeeping has been considered as an agricultural operation. In 1940 two questions were carried in regard to the number of hives of bees. The first related to hives on a farm on April 1 which were owned by someone other than the farm operator, and the second related to hives owned by the farm operator whether kept on his farm or on nonfarm land such as deserts, hills, swamps, etc. Data for each of these two groups are presented in county table IX, at the beginning of which totals for the Territory are carried. If the number of farms reporting hives of bees for each of these groups are added, the total may differ somewhat from the number of farms reporting hives of bees shown in Territorial table 8 since the figures shown in Territorial table 8 for this item represent the number of farms having bees regardless of whether owned by the operator or by others but kept on farms.

**Crops.**—With the exception of vegetables and fruits and nuts, three separate inquiries were made for each crop—namely, acres in crop, acres harvested, and quantity harvested. Acres in crop include not only the acres harvested, but also the acreage in the crop during 1939 for future harvest as well as the acreage planted in the crop for harvest in 1939, on which the crop failed. The acres harvested and quantity harvested usually refer to the calendar year 1939, but in some cases, such as sugarcane, they refer to the acres and quantity harvested during the crop year (which does not exactly correspond to the calendar year). For forage crops, such as alfalfa, the acres harvested represents the actual acres from which the crop was harvested, as the acreage was counted only once when more than one harvest of the same crop was made from the same land during the year. Field crops and forage crops not specifically called for on the schedule were to be reported under the inquiries "Other field crops" and "Other forage crops." However, as indicated by the data, other field and forage crops are relatively unimportant.

**Vegetables.**—Information is given for the farms reporting, acreage, and value of the individual vegetables harvested for sale. Data for Irish potatoes, sweetpotatoes, taro, and cassava are given under field crops.

**Horticultural specialties.**—The area in trees, vines, bulbs, flowers, and field and garden plants grown for sale was included under this classification and the value of sales in 1939 was obtained.

**Fruits, coffee, and nuts.**—Land in fruits, coffee, and nuts comprises the area occupied by all fruits and nuts, including coffee and pineapples on April 1, 1940. Separate inquiries were made for the four most important groups of crops included in this total area, namely: Bananas, citrus fruits, coffee, and pineapples. For most individual fruits and nuts, separate inquiries were made as to the number of trees of bearing age and not of bearing age on April 1, 1940 and the quantity harvested in 1939.

#### VALUE OF FARM PRODUCTS SOLD, TRADED, OR USED BY FARM HOUSEHOLDS

The 1940 schedule included eight definite over-all questions relating to the value of farm products sold, traded, or used by farm households. In addition, the value of each specified vegetable sold or traded was obtained. These latter items were totaled in the Washington Office, making in reality nine major value questions. These questions in the order of their appearance on the schedule were as follows:

1. Value of all crops produced in 1939 that were or are to be paid to landlord, sold, or traded.
2. Value of vegetables harvested in 1939 for sale.
3. Value of all fruits, coffee, and nuts produced in 1939, that were or are to be paid to landlord, sold, or traded.
4. Value of sales in 1939 of trees, vines, bulbs, flowers, and field and garden plants grown for sale. For brevity, this group has been designated as "Horticultural specialties" in the statistical tables.
5. Value of all dairy products (milk, cream, butter, cheese, etc.) sold or traded in 1939.
6. Value of all livestock (except poultry and bees) sold or traded in 1939.
7. Value of all poultry, eggs, baby chicks, poult, etc., sold or traded in 1939.
8. Value of wool, mohair, meat, hides, etc., and honey and wax produced in 1939 that were or are to be sold or traded and bees sold in 1939.
9. Value of commodities produced on this farm in 1939 that were used by your family on or off the farm and by other households if any on this farm (meat, milk, poultry, eggs, honey, vegetables, fruits, fuel wood, etc.).

**Unclassified farms.**—When the figures on crop and livestock production and values were incomplete or when no products were reported as sold, traded, or used by farm households, the farm was shown as "Unclassified."

**Farms reporting total value of farm products sold, traded, or used by farm households.**—This represents all farms for which there were usable reports on value of products, but excludes reports for unclassified farms. In other words, the number of farms reporting total value of products plus the unclassified farms equals all farms enumerated as of the census date.

**Field crops.**—This question covers the value of the sales of field crops such as corn, cotton, Irish potatoes, sweetpotatoes, sugarcane, rice, peanuts, taro, cassava, etc. Inasmuch as sugarcane was not sold as such it was necessary to estimate the farm value of the sugarcane produced.

**Vegetables for sale.**—The values reported for this item, as just noted, represent an addition for each individual farm of the values reported for individual vegetable crops harvested in 1939 for sale. Irish potatoes and sweetpotatoes, taro, and cassava were not included under vegetables, but under field crops.

**Fruit, coffee, and nut crops.**—In general the figures reported for the question covering these crops relate to the value of all fruits, coffee, and nuts produced in 1939 that had been or were to be sold at the time of the census enumeration. The value of the sale of pineapples has been included in the value of fruit, coffee, and nut crops.



**Horticultural specialties.**—The values reported for this item represent the sales in 1939 of trees, vines, bulbs, flowers, and field and garden plants.

**Dairy products.**—As previously mentioned, this question called for the value of all dairy products sold or traded in 1939. Separate inquiries were made as to the value of butter sold, whole milk sold, and cream sold. The value of dairy products purchased for resale was to be excluded, both from this value question and from the preceding items on quantities and values of butter, whole milk, and cream sold.

**Livestock.**—This value question immediately followed two types of livestock questions, one relating to the number of animals purchased and the other to the number of animals sold for each of the following: Cattle, calves, hogs and pigs, and sheep and lambs. The question, by wording, excluded the value of poultry and bees sold. The enumerator was instructed to explain if animals, other than the kinds listed in the preceding questions, were sold, the intention being that the value question should cover also sales of other kinds of livestock such as horses, mules, and goats. The statistics for this item represent, therefore, the totals of individual farm sales regardless of whether or not the animals were produced on the farm for which the sale was reported. The value of slaughtered animals sold was to be reported under other livestock products.

**Poultry and poultry products.**—As previously noted, hatcheries were included in the list of types of specialized agriculture for which schedules were required and the enumerator was instructed to explain whenever the value entry for this question appeared high as a result of sales of baby chicks, poults, hatching eggs, etc.

**Other livestock products.**—The term "Other livestock products" is used in this bulletin to indicate the miscellaneous livestock products question, the wording of which was as follows: "Value of wool, mohair, meat, hides, etc., and honey and wax produced in 1939 that were or are to be sold or traded, and of bees sold in 1939." The value of meat sold applies to slaughtered animals sold off farms or sold to employees living on the farm, ranch, or plantation.

**Farm products used by farm households.**—As mentioned previously, this question called for the value of commodities of the farm in 1939 that were used by the operator's family and by other households on the farm. The following items were listed individually under the schedule question: Meat, milk, poultry, eggs, honey, vegetables, fruits, fuel wood, etc. The value of these products were to be estimated on the basis of the price that the farm operator would have received for the respective products if he had sold them. Farm products of institutional farms, which were used by inmates of the institution, were considered as sold, and the value was included under the eight other value of products items where applicable.

#### FARMS CLASSIFIED BY MAJOR SOURCE OF INCOME

In making the tabulation by major source of income, the schedules for farms reporting farm products sold or traded or consumed by farm households were sorted into 17 groups on the basis of the 9 value of products groups and the kinds of crops harvested and types of livestock or livestock products sold. The basis for this classification was primarily the largest value of products entry. However, farms with the largest value of products entry of (1) field crops; (2) fruit, coffee, and nut crops; (3) livestock and livestock products; were further classified on the basis of the major crop or kind of livestock contributing to the largest value of products entry.

The 17 groups of farms separately classified on the basis of major source of income were:

A. Farms reporting the largest value of products entry for field crops:

(1) Rice farms (2) taro farms (3) sugarcane farms

(4) Other field crop farms. These include farms on which the sale of cotton, Irish potatoes, peanuts, and/or field corn provides the major proportion of the value of products entry for the field crops.

B. Other crop farms:

(5) Vegetable farms. These comprise farms on which the largest value of products entry represented the value of vegetables harvested for sale.

(6) Horticultural specialties farms. Farms on which the largest value of products entry represented the sale of trees, vines, bulbs, flowers, and garden plants were classified as horticultural-specialties farms. Most of these farms were reported in Honolulu County.

C. Farms on which the value of fruits, coffee, and nuts represented the largest single value of products entry:

(7) Pineapple farms (8) papaya farms

(9) banana farms (10) coffee farms

(11) other fruit and nut farms. These comprise farms on which the value of citrus fruits, avocados, macadamia nuts, etc., represented the major part of the value of products entry for fruits, coffee, and nuts.

D. Farms with livestock and livestock products as the largest source of the value of products reported:

(12) Hog farms. These represent farms on which the total value of hogs and pork comprised the largest source of income.

(13) Beef cattle farms. These comprise farms on which the sale of beef cattle and beef represented the largest source of income.

(14) Dairy products farms. Farms on which the value of all dairy products represented the largest single value of products entry.

(15) Poultry and poultry products farms. These represent farms on which the value of all poultry, eggs, baby chicks, poults, etc., constituted the largest value of products entry.

(16) Other livestock and livestock products farms. Farms on which the sale of sheep and lambs, bees, honey, goats, and wool comprised the largest major source of income were classified in this group.

E. Farms on which the estimated value of products produced on the farm and used by the family of the farm operator or by other households on the farm were classified as:

(17) Farms with major source of income as farm products used by farm households.

#### FARMS CLASSIFIED BY TOTAL VALUE OF PRODUCTS

This classification includes only farms reporting value of farm products sold, traded, or used by farm households. Unclassified farms were excluded. Each farm was classified on the basis of the total value of all farm products sold, traded, or used by farm households.

**Interpretation of the value of product statistics.**—In general the statistics on total value of farm products sold, traded, or used by farm households represent an approximate measure of gross-farm income. If the value of farm products used by farm households is excluded from the totals, the resulting figures on value of farm products sold or traded represent an approximation of cash farm income.

**Unclassified farms.**—As has been pointed out previously, the tabulations of value of farm products sold, traded, or used by farm households, for 1940, exclude the value of products for the "unclassified" farms. The extent of this incompleteness is shown by counties, both in number of farms and in percent of all farms, in county table XIII.

**Net income.**—The figures on specified farm expenditures, shown in county table VI, should not be deducted from the figures on value of products sold, traded, or used by farm households in an attempt to arrive at statistics on "net" income. Census figures are not available for many important farm expenditure items such as cost of irrigation, containers, sprays, seeds, livestock purchased, etc.

**Nonagricultural income.**—Income from nonagricultural sources is not included in the figures on farm income for the 1940 census enumeration. Because of the growth of part-time farming in recent years, nonagricultural income is an important item when comparisons are made involving the economic position of the individual farmer rather than farming as an industry. There was no provision on the 1940 Farm, Ranch, and Plantation Schedule for reporting the amount of government benefit payments.