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# Appendix A

## Statistical Methodology and General Terms

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### CONGRESSIONAL DISTRICT ASSIGNMENT METHODOLOGY

The 118<sup>th</sup> Congress Congressional District (CD) tabulations of 2022 Census of Agriculture data are based on operation location. Census respondents were asked to declare their principal county of operation as the county with the greatest share of their total value of production. Additionally, the respondent's mail ZIP Code was known; however, this ZIP Code did not necessarily correspond to the actual location of the farm or ranch. CD assignments were based on map boundary files produced by the National Agricultural Statistics Service (NASS), as well as other files produced outside of NASS. Digitized county and CD boundary files were provided by the U.S. Census Bureau, which is responsible for congressional apportionment among the States, as well as for mapping the resulting CDs in accordance with State requests. Digitized Zip Code boundary files for 2022 were obtained from Environmental Systems Research Institute, Inc.'s (ESRI) data and maps. In addition, digitized agricultural/non-agricultural land boundaries were produced by NASS.

Reports returned for the 2022 census that were determined to be from in-scope farms or ranches were assigned to their prospective CDs using both deterministic and probabilistic assignments. Another 58.3 percent were deterministically assigned to a CD because geocoding software was available that enabled NASS to geocode those operations' locations to the appropriate CD. (I.e., for records where the ZIP Code was within the reported principal county, NASS was able to calculate geographic coordinates for those operations based on address, and spatially determine in which CD each operation's coordinates were located.) Another 35.5 percent of records were deterministically assigned to CDs because the principal county reported fell entirely within a single CD. Another 2.6 percent of all records were assigned deterministically to CDs because their mail ZIP Code was located in the operation's principal county, and the Zip Code fell entirely within a single CD. The remaining 3.6 percent of census farm and ranch records were assigned probabilistically following a statistical model.

These records involved farm operations where either the county or the ZIP Code contained multiple CDs. For these

cases, two models for multiple CD probabilistic assignments were developed. The first model was used if the mail ZIP Code was located in the operation's principal county. The probabilities of assignment to each CD within the ZIP Code were equal to the proportion of that ZIP Code's agricultural land contained in the CD, as calculated by NASS. The second model was used if the mail ZIP Code was not located in the operation's principal county. In that case NASS used the principal county in carrying out the CD assignment. The probabilities of assignment to each CD within the principal county were equal to the proportion of the county's agricultural land contained in the CD, as calculated by NASS.

Probabilistically assigned farms and ranches were reviewed by NASS Regional Field Offices to verify their assignments and, in some cases, corrections were made. The farms and ranches that were reviewed were typically large operations (with respect to their total value of production) or operations with a rare commodity. All published farm counts and totals were fully adjusted for nonresponse, misclassification, and coverage.

### GENERAL TERMS

**Acres and quantity harvested.** Crops were reported in whole acres, except for the following crops that were reported in tenths of acres: tobacco, hops, nursery and greenhouse crops in the open, vegetables including potatoes and sweet potatoes, fruit and nut crops including land in orchards, and berries. Totals for crops reported in tenths of acres were rounded to whole acres at the aggregate level during the tabulation process. Nursery and greenhouse crops grown under glass or other protection were reported in square feet and are published in square feet.

If two or more crops were harvested from the same land during the year (double cropping), the acres were counted for each crop. Therefore, the total acres of all crops harvested could exceed the acres of cropland harvested. No double cropping is allowed for hay or fruit and nut crops.

When more than one cutting of hay was taken from the same acres, the acres were counted only once. If there were multiple cuttings of one type of hay production, e.g., two

cuttings of alfalfa for dry hay, acreage was reported once, but the quantity harvested includes all cuttings. Acreage cut and tons harvested for both dry hay and haylage, silage, or greenchop were reported for each crop. For interplanted crops or “skip-row” crops, acres were reported according to the portion of the field occupied, whether by a crop or whether it was idle land. If a crop was interplanted in an orchard or vineyard and harvested, then the entire orchard or vineyard acreage was reported under the appropriate fruit crop and the interplanted estimated crop acreage was reported under the appropriate crop.

If a crop was planted but not harvested, the acres were not reported as harvested. These acres were reported in the Land Use section on the report form under the appropriate items – cropland on which all crops failed or were abandoned, cropland in summer fallow, cropland idle or used for cover crops or soil-improvement but not harvested and not pastured or grazed, or other pasture and grazing land that could have been used for crops without additional improvements. This does not include fruit and nut orchards, vineyards, berries, acres in production for cultivated Christmas trees, and acres in production for short rotation woody crops that were not harvested. Acreage in these commodities were included in cropland harvested regardless of whether the crop was harvested. Abandoned orchards were reported as cropland idle, not as harvested cropland, and the individual abandoned orchard crop acres were not reported.

Crops that were grazed by livestock were reported as “Other pasture and grazing land that could have been used for crops without additional improvements.” Crop residue left in fields after the 2022 harvest and later grazed by livestock were reported as cropland harvested and not as other pasture or grazing land that could have been used for crops.

Quantity harvested was not obtained for crops such as fruits, nuts, berries, vegetables, melons, nursery crops, and greenhouse crops.

**Crop year or season covered.** Acres and quantity harvested are for the calendar year 2022 except for coffee. Data for coffee relate to July 2021 through June 2022.

**Cropland, harvested.** See Harvested cropland.

**Farms by legal status.** All farms were classified by legal status in the 2022 census. This section collects information for federal tax purposes to determine an operation’s legal status. The classifications used were:

1. Family or individual (sole proprietorship), excluding partnership and corporation.

2. Partnership, including family partnership – in selected tables, partnership was further subclassified into:
  - a. Registered under State law.
  - b. Not registered under State law.
3. Corporation, including family corporations - in selected tables, corporation was further subclassified into:
  - a. Family held or other than family held.
  - b. More than 10 stockholders.
4. Other- estate or trust, prison farm, grazing association, American Indian reservation, etc.

**Farms by tenure of producer.** All farms were classified by tenure of producers. The classifications used were:

- Full owners operated only land they owned.
- Part owners operated land they owned and also land they rented from others.
- Tenants operated only land they rented from others or worked on shares for others.

Farms with hired managers are classified according to the land ownership characteristics reported. For example, a corporation owns all the land used on the farm and hires a manager to run the farm. The hired manager is considered the farm producer, and the farm is classified with a tenure type of “full owner” even though the hired manager owns none of the land he/she operates.

**Forage - land used for all hay and all haylage, grass silage, and greenchop.** Data shown represent the area harvested with each acre counted only once if dry hay, haylage, grass silage, or greenchop were cut from the same acreage or if there were multiple cuttings of dry hay, haylage, grass silage, or greenchop. Data exclude corn silage and sorghum silage. Quantity produced is the sum of the quantity harvested of all hay including alfalfa, other dry hay, and all haylage, grass silage and greenchop after converting the all haylage, grass silage, and greenchop quantity harvested to a dry equivalent basis (13 percent moisture). The green tons of all haylage, grass silage, and greenchop harvested were multiplied by a factor of 0.4943 to convert to a dry equivalent. This conversion factor is based on the assumption that one ton of dry hay is 0.87 ton of dry matter, one ton of haylage or grass silage is 0.45 ton dry matter, and one ton of greenchop is 0.25 ton dry matter. The all haylage, grass silage, and greenchop quantity harvested is assumed to be comprised of 90 percent haylage and grass silage and 10 percent greenchop. Therefore, the conversion factor used to adjust all haylage, grass silage, and greenchop quantity harvested to a dry equivalent basis =  $[(0.45*0.9)+(0.25*0.1)]/0.87 = 0.4943$ .

**Government payments.** This category consists of payments from Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), and Conservation Reserve Enhancement Program (CREP); loan deficiency payments; disaster payments; other conservation programs; and all other Federal farm programs under which payments were made directly to farm producers, including those specified in the 2018 Agricultural Act (Farm Bill), including Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC). Commodity Credit Corporation (CCC) proceeds, amount from State and local government agricultural program payments, and Federal crop insurance payments were not tabulated in this category.

**Harvested cropland.** This category includes land from which crops were harvested and hay was cut, land used to grow short rotation woody crops, Christmas trees, and land in orchards, groves, vineyards, berries, nurseries, and greenhouses. Land from which two or more crops were harvested was counted only once. Land in tapped maple trees was included in woodland not pastured. The 2022 census definition for harvested cropland is the same as the 2017 definition.

**Hispanic, Latino, or Spanish origin.** Producers of Hispanic, Latino, or Spanish origin are found in all of the racial groups listed in the census and were tabulated according to the race reported, as well as on tables pertaining only to this group.

**Land in farms.** The acreage designated as “land in farms” consists primarily of agricultural land used for crops, pasture, or grazing. It also includes woodland and wasteland not actually under cultivation or used for pasture or grazing, provided it was part of the farm producer’s total operation. Large acreages of woodland or wasteland held for nonagricultural purposes were deleted from individual reports during the edit process. Land in farms includes CRP, WRP, FWP, and CREP acres.

Land in farms is an operating unit concept and includes land owned and operated as well as land rented from others. Land used rent free was reported as land rented from others. All grazing land, except land used under government permits on a per-head basis, was included as “land in farms” provided it was part of a farm or ranch.

Land under the exclusive use of a grazing association was reported by the grazing association and included as land in farms. All land in American Indian reservations used for growing crops, grazing livestock, or with the potential of grazing livestock was included as land in farms. Land in reservations not reported by reservation, individual American Indians, or non-Native Americans was reported

in the name of the cooperative group that used the land. In a few instances, an entire American Indian reservation was reported as one farm.

**Land in orchards.** This category includes land in bearing age and nonbearing age fruit trees, citrus or other groves, vineyards, and nut trees of all ages, including land on which all fruit crops failed. Respondents also reported bearing age acres and nonbearing age acres by individual fruit and nut crops.

**Legal status for tax purposes.** See Farms by legal status.

**Market value of agricultural products sold.** This category represents the gross market value before taxes and production expenses of all agricultural products sold or removed from the place in 2022, regardless of who received the payment. It is equivalent to total sales and it includes sales by the producers as well as the value of any shares received by partners, landlords, contractors, or others associated with the operation. It includes value of organic sales, direct sales and the value of commodities placed in the Commodity Credit Corporation (CCC) loan program. Market value of agricultural products sold does not include payments received for participation in other Federal farm programs. It does not include income from farm-related sources such as customwork and other agricultural services, or income from nonfarm sources.

The value of crops sold in 2022 does not necessarily represent the sales from crops harvested in 2022. Data may include sales from crops produced in earlier years and may exclude some crops produced in 2022 but held in storage and not sold. For commodities such as sugarbeets and wool sold through a co-op that made payments in several installments, respondents were requested to report the total value received in 2022.

The value of agricultural products sold was requested of all producers. If the producers failed to report this information, estimates were made based on the amount of crops harvested, livestock or poultry inventory, or number sold. Caution should be used when comparing sales in the 2022 census with sales reported in earlier censuses. Sales figures are expressed in current dollars and have not been adjusted for inflation or deflation. See Farms with sales and government payments of less than \$1,000.

**Nursery, greenhouse, floriculture, and sod.** Data are for total square feet under protection and acres in the open. Individual crop data were collected for area under glass or other protection, area in the open, and sales of aquatic plants, floriculture and bedding crops, nursery crops, sod, propagative materials, hemp grown under protection, food crops grown under protection, and mushroom crops. Total

sales data are the summation of all crops.

**Other animals and other animal products sold.** This category includes number of farms and value of sales for all animals and animal products reported in the other livestock and livestock products section.

**Other crops and hay.** Data are for the total market value of all crops not categorized into one of the prelisted crop sales categories on the report form and include hay sales. This category includes crops such as grass seed, hay and grass silage, haylage, greenchop, hops, maple syrup, mint for oil, peanuts, sugarcane, sugarbeets, etc.

**Primary occupation of producer.** Data on primary occupation were obtained from up to four producers per farm. The primary occupation classifications used were:

1. *Farm or ranch work.* The producer spent 50 percent or more of his/her worktime during 2022 farming or ranching.
2. *Other.* The producer spent less than 50 percent of his/her worktime during 2022 farming or ranching.

**Producer.** The term producer designates a person who is involved in making decisions for the farm operation. Decisions may include decisions about such things as planting, harvesting, livestock management, and marketing. The producer may be the owner, a member of the owner's household, a hired manager, a tenant, a renter, or a sharecropper. If a person rents land to others or has land worked on shares by others, he/she is considered the producer only of the land which is retained for his/her own operation. The census collected information on the total number of male producers, the total number of female producers, and demographic information for up to four producers per farm.

**Producer characteristics.** Producers (up to four producers per farm) were asked to report primary occupation, sex, age, race, if they were of Hispanic, Latino or Spanish origin, place of residence, if retired from farming, number of days worked off farm, year in which his/her operation of the farm began, year began operating any farm, if they were a hired manager, if they had military service, and the number of persons living in their households. In addition, the total number of male and female producers was collected from each operation.

**Race of producer.** With the exception of Hawaii, data were collected for American Indian and Alaska Native, Asian, Black or African American, Native Hawaiian and Other Pacific Islander, and White producers. Respondents were asked to mark one or more of the race categories. In Hawaii producer race data were collected for American Indian (included Alaska Native), Chinese, Filipino, Japanese, Korean, Other Asian, Black or African American, Native Hawaiian, other Pacific Islander, and White. The combination of Native Hawaiian and Other Pacific Islander is equivalent to the Native Hawaiian or Other Pacific Islander category on the other forms. The combination of the Chinese, Filipino, Japanese, Korean, and Other Asian categories is equivalent to the Asian category on the other forms. The Volume 1, Geographic Area Series, U.S. Summary publication only displays counts for the categories of Native Hawaiian and Other Pacific Islander and Asian. Data for the 11 Hawaii race categories are published in chapter 2 of the Hawaii publication of the Volume 1 series.

**Vegetables harvested for sale.** The acres of vegetables harvested is the summation of the acres of individual vegetables harvested. All of the individual vegetable items may not be shown. When more than one vegetable crop was harvested from the same acreage, acres were counted for each crop.