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ARMS 3

**Agricultural
Resource
Management
Survey**

Phase 3

Interviewer's Manual

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1 General

1.1 Purpose

The Agricultural Resource Management Survey (ARMS) is the U.S. Department of Agriculture's primary source of information on the financial condition, production practices, and resource use of America's farm businesses and the economic well-being of America's farm households. ARMS is a nationally representative survey administered using several phases—sample screener, field-level, and farm-level phases—targeting about 5,000 fields and 30,000 farms each year.

The field-level phase collects information on production practices and costs (fertilizer, pesticide, labor, tillage, seed, etc.) for target commodities. The farm-level phase collects financial information for farm businesses and a variety of financial and demographic information (age, education, occupation, off-farm income, etc.) for farm operators and their households. The survey collects information from 48 States and is designed to be representative of the continental U.S. and to support State-level estimates for 15 key agricultural States.

Many policy decisions made in Washington, D.C. and in the states directly affect U.S. farmers and ranchers. The ARMS provides farmers and ranchers with one of the best means to ensure that policy-makers have access to accurate and objective information when making those decisions.

1.2 ARMS 3 / Census Integration

The 2017 Census of Agriculture is the 29th Federal Census of Agriculture and the fifth conducted by the United States Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS). It covers land use, net income, operator and farm attributes, production and sales of agricultural products during 2017, inventory of livestock, poultry, and other animals as of December 31, 2017, and many other farm-related items.

A combined questionnaire to collect both ARMS Phase 3 and 2017 Census of Agriculture data was created again this year, as done in 2007 and 2012. Questionnaires for the mandatory 2017 Census of Agriculture are mailed to all farmers and ranchers in the U.S. during the same month the 2017 ARMS Phase 3 is mailed out. Since data collected on the ARMS and Census are similar, it was deemed an unnecessary burden to ask farm operators to complete both complex surveys.

Operators sampled for ARMS Phase 3 will receive the integrated ARMS/Census questionnaire, instead of receiving the Census of Agriculture questionnaire. Completing the ARMS questionnaire will satisfy the mandatory Census reporting requirement and also provide the necessary information for the ARMS. ARMS data will be transferred to Census after ARMS is completed.

1.3 Data Collection Phases

Annually, the ARMS collects production practices and cost of production data on selected commodities. The ARMS also collects detailed whole farm financial information from a

representative sample of farms and ranches across the country. To accomplish this, the ARMS project is conducted in three data collection phases. In many ways, the three phases can be viewed operationally as independent surveys. However, the power of the ARMS design is that the data between phases are related and can be combined and analyzed to provide a comprehensive look at farming and ranching operations.

- The initial phase (ARMS - Phase 1), conducted from May through July, determines the status of the business and collects general farm data such as crops grown, livestock inventory, and value of sales. Phase 1 data are used to qualify (or screen) farms for the other phases.
- The second phase (ARMS - Phase 2) is conducted from September through December. This phase collects data associated with agricultural production practices, resource use, and variable costs of production for specific commodities.
- The final phase (ARMS - Phase 3), which is the focus of this manual, is conducted from the following January through April. Phase 3 collects whole farm finance and operator characteristics information.

Respondents sampled for the Production Practices and Costs Report (PPCR) in Phase 2 will be asked to complete a Phase 3 report to obtain financial, resource use, and cost of production data for the entire operation. It is vital that both the Phase 2 and Phase 3 questionnaires be completed for these operations. Data from both phases provide the link between agricultural resource use and farm financial conditions. This is a cornerstone of the ARMS design.

1.4 Uses of ARMS Data

Farm organizations, commodity groups, agribusiness, Congress, the President, State Departments of Agriculture, and the USDA use information from ARMS to evaluate the financial performance of farm/ranch businesses and to make policy decisions affecting agriculture. Specifically, the ARMS:

- gathers information about relationships among agricultural production, resources, and the environment to support evaluations of these relationships. The data are used to understand the relevant factors in producing high quality food and fiber products while maintaining the long term viability of the natural resource base and rural communities;
- determines production costs of various crop and livestock commodities, and the relative importance of various production expense items;
- is used in the estimates of net farm income and provides data on the financial situation of farm and ranch businesses, including the levels of assets and debt. ARMS data provide the ONLY National perspective on the annual changes in the financial conditions of production agriculture;
- informs the farm sector portion of the national Gross Domestic Product (GDP). While the farm sector portion may be small, its volatility must be accurately measured to identify the sources of change in the overall economy;

- provides the agricultural component of State and Local Area Personal Income estimates prepared by the Commerce Department's Bureau of Economic Analysis (BEA). These measures are used to drive formulas for distribution of federal assistance dollars to communities, and by businesses and state and local governments to make local investment and infrastructure decisions;
- identifies the characteristics and financial situation of agricultural producers and their households, including information on management strategies and off-farm income. ARMS provides the ONLY source of data that link household financial resources and outcomes to farm business finances;
- provides baseline commodity cost and return estimates that are used to establish annual estimates during the next 4-8 years. Annual commodity estimates are set by updating the survey base using changes in annual prices, acreage, and production.

In general, ARMS data benefits farmers directly through governmental policy, like the farm bill, that are influenced by ARMS data. Most respondents do not realize the data coming from the ARMS helps them indirectly through information from extension advisors, in reports issued by State colleges and universities, in farm magazines, newspapers, and on radio or TV broadcasts.

1.5 ARMS Products

Markets cannot operate efficiently without accurate and timely information. As with all USDA reports everyone, from the smallest farmer to the largest agribusiness firm, has free and equal access to the results from this survey. This access to information allows farmers to stay on equal footing with agribusiness firms and others who market agricultural commodities.

Reports and tables using ARMS data can be downloaded from the following NASS and ERS Web Sites:

- The NASS Web Site is: <http://www.nass.usda.gov>
- The ERS Web Site is: <http://www.ers.usda.gov>
- The ERS ARMS Data User's Manual is: <http://www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices.aspx>

1.5.1 NASS Reports

NASS publishes two reports from ARMS. The "Agricultural Chemical Use - Field Crops" publication ([http://www.nass.usda.gov/Surveys/Guide to NASS Surveys/Chemical Use/](http://www.nass.usda.gov/Surveys/Guide%20to%20NASS%20Surveys/Chemical%20Use/)) uses data collected in the ARMS Phase 2, and is normally released the following May.

The second report, "Farm Production Expenditures", compiled from the ARMS Phase 3, is released in early August. This report shows expenditures for the U.S., 5 farm production regions, 15 major agricultural estimating States, 8 U.S. economic sales classes, and U.S. crop and livestock farms. (<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1066>).

1.5.2 ERS Reports & Other Uses of ARMS Data

1. ARMS financial data

All versions of the ARMS Phase 3 provide data used in constructing farm-level financial accounts--income statements and balance sheets--and those farm-level measures are used to construct aggregated financial accounts for regions, states, and the entire agricultural sector. The financial and production measures from the surveys are used for a range of research analyses.

Ongoing uses of the data:

Farm income and balance sheet accounts. ARMS data form an essential element in ERS' annual estimates and forecasts of net farm income, farm sector value added, and farm assets and debt. In turn, the estimates and forecasts are widely used by policymakers, lenders, and input providers to track the financial performance and outlook for agriculture.

ARMS data are used directly by leaders of the House and Senate Ag committees, and their staff, through the ERS ARMS on-line data tool at <http://www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices/tailored-reports-farm-structure-and-finance.aspx>. The tool provides data on farm income and farm balance sheet accounts, sorted by region, commodity orientation, and farm size class. Information on farm structure and farm production practices is also available. They use the data tool as they plan and debate farm policy, in the Farm Bill, and in other contexts. USDA officials also use the tool as they implement legislation passed by Congress.

ERS estimates of farm sector assets, debt and net worth are widely used by lenders, input providers, and policymakers to evaluate credit and lending conditions in the farm sector. When faced with poor information and uncertainty, lenders can become reluctant to provide financing except under the most favorable circumstances. Data drawn from ARMS surveys, made widely available in summary form to a wide range of users, provide one of the few reliable, representative, and sector-wide sources of information on farm financial conditions.

Personal Income. ARMS data are used by the Commerce Department's Bureau of Economic Analysis (BEA) in the development of State and Local Area Personal Income estimates. In turn, the Personal Income estimates are used in formulas for allocating federal funds across States. Examples of programs that use personal income data in formulas to allocate Federal funds across states include Medicaid, Supplemental Security Income, Agricultural Extension, University Research, and Agricultural Lending.

U.S. agricultural productivity accounts. ERS uses ARMS data in the construction of USDA's official annual sector-wide estimates of agricultural output, input, and productivity growth. The estimates are used by policymakers, commodity groups, academics, and media to understand the sources of growth in US agriculture, to evaluate the impacts of investments in research, infrastructure, and extension on agricultural output and productivity, and to project the links between agricultural productivity, commodity prices, and food prices.
<http://www.ers.usda.gov/data-products/agricultural-productivity-in-the-us.aspx>

Recent Research Uses of ARMS financial and structural data:

Debt use by farm businesses. ERS used ARMS data to analyze how farm businesses used debt over the last two decades, with a focus on the considerable variety in their debt obligations.

The share of highly leveraged farm businesses (those with a debt-to-asset ratio greater than 0.40) has declined over time, as has the share of the value of production contributed by highly leveraged farms. Although stable overall, U.S. farm debt use varied widely by farm size, specialization, operator age, and other farm characteristics.

<https://www.ers.usda.gov/publications/pub-details/?pubid=43843>

Tax reform: likely impacts on farm businesses. Proposals calling for fundamental tax reform have once again called attention to a tax system that many regard as overly complex, inefficient, and inequitable. The primary elements of proposed reforms include the elimination of tax preferences, a restructuring of capital gains and dividend tax rates, lowered tax rates on ordinary income, and a reduction in the number of tax brackets. Such changes could have a significant impact on the after-tax income of both farm businesses and rural households, since the current tax system contains features that provide substantial benefits to farm businesses in the form of reduced rates on capital gains, accelerated cost recovery provisions, and other special deductions for farm production activities. This report uses ARMS farm financial data to support detailed analyses of the potential impact of tax reform proposals on farm businesses and rural households in the United States. <https://www.ers.usda.gov/publications/pub-details/?pubid=43714>

Is there duplication among farm programs? In the summer of 2013, the U.S. Government Accountability Office (GAO) undertook a project investigating the potential for overlap and duplication among USDA's farm programs. ERS staff used 2008-2011 ARMS data to provide custom analyses based on farm size, farm production type, and major program category – direct payments, program payments related to low commodity prices, major conservation programs, and other agricultural programs such as disaster relief. Publicly released in 2014, the report found that: about one-third of all farms received payments from at least one farm program; large farms were more likely to receive payments from multiple farm programs than small farms; and, although financial assistance provided to farmers under the 60 USDA programs may have overlapped, the programs did not appear to be duplicative. <http://www.gao.gov/products/GAO-14-428>

Local and regional food systems. A key to understanding farmers' participation in local/regional food systems is to distinguish the types of market channels through which farmers' sell food commodities: directly to consumers at farmers' markets, farm stands, etc., or through 'intermediated channels' such as local grocers, restaurants, schools, etc. ARMS has provided data on both types of channels since 2008. For a Report to Congress, ERS researchers combined ARMS with census of agriculture data to estimate the value of local food sales at \$5.8-\$6.6 billion. The report also covers several other issues related to local and regional foods, including farm business survival, local economic impacts, food safety standards and the Food Safety Modernization Act, characteristics of local foods consumers, and environmental issues. <https://www.ers.usda.gov/publications/pub-details/?pubid=42807>

Beginning farmers and ranchers. The 2014 Farm Bill (the Agricultural Act of 2014) provides increased funding for beginning farmer development, facilitates the transfer of farmland to the next generation of farmers, and improves outreach and communication to military veterans about farming and ranching opportunities. This report uses ARMS data to provide basic economic and demographic information on beginning farmers and ranchers, and ties that information to these recent policy initiatives. <https://www.ers.usda.gov/amber-waves/2014/june/beginning-farmers-and-ranchers-and-the-agricultural-act-of-2014/>

Farmland leasing and debt: According to ARMS data, farmers own about 59 percent of the farmland acres they operate, while they lease 35 percent with cash payments and 6 percent on a cash-crop-share basis. Large commercial farms are the largest users of leasing compared to intermediate and small farms. Larger farms may use land leasing to take advantage of scale economies while smaller farms may use leasing as a substitute for debt (especially beginning farms) due to the high cost of land and other capital inputs. This work looks at the degree of substitution between debt and leasing for different farm typologies. Leasing was a close substitute (a dollar of leasing replaces about a dollar of debt) for large and medium sized farms. For beginning farms, a dollar of leasing was found to replace less than a dollar of debt. The finding suggests that leased assets may be more risky for these farms and may expose the lessee to additional liquidity and bankruptcy costs.

<http://ageconsearch.umn.edu/bitstream/170495/2/Final%20Poster%20draft.pdf>

Research on farm households

Farmers and non-farm business ventures. ARMS farm-level data show that almost a third of U.S. farm households generate income by engaging in business ventures independent of farming, with distinctly different community and household benefits. On-farm diversification activities--like agritourism--and off-farm business ventures (such as an equipment dealership) each accounted for about half of these activities, but off-farm businesses generated about 80 percent of all alternative (nonfarm) business income earned by farm households, creating the largest impact on the local economy. Off-farm businesses operated by farm households contributed an estimated \$55 billion in value-added income to the gross regional products of their local economies and paid out \$25 billion in wages and salaries to 853,100 part-time and full-time employees. In general, the share of the local employment base accounted for by farmer-owned off-farm businesses was higher in more rural counties.

<https://www.ers.usda.gov/publications/pub-details/?pubid=43674>

Off-farm employment: Most farm households earn income from nonfarm sources, and most nonfarm income comes from off-farm jobs (rather than from pensions or financial investments). Moreover, income growth among farm families from nonfarm sources has grown more rapidly than income growth among all US families. ERS used ARMS data to evaluate off-farm employment among farm families. Farm operators and their spouses were more likely than other workers to have managerial and professional off-farm occupations. This pattern is particularly true among those with a college education. Those occupations paid relatively high wages, which helps account for the relatively strong growth in farm families' off-farm incomes.

<https://www.ers.usda.gov/publications/pub-details/?pubid=43792>

Farm families' health insurance coverage: ARMS collected information on health insurance coverage among farm operator households from 2006 through 2011, along with other data on farm and farm family attributes. Since most health insurance is employer-provided, and since most farmers are self-employed, there have been concerns that many farmers would be without health insurance. The resulting study established that farm-operator households are just as likely to have health insurance coverage as other Americans. Off-farm work plays an important role in coverage, by increasing access to health insurance through coverage provided directly by employers, and by providing farm households with an alternative source of income for purchasing insurance directly. (<http://naldc.nal.usda.gov/download/55962/PDF>).

Farm businesses and the internet: Over two-thirds of American farm businesses now access the Internet to purchase agricultural inputs, market their products, obtain market and other information, apply for loans and grants, and conduct other business. ERS research uses ARMS data on farm Internet use to evaluate the economic impact of Internet infrastructure, the use and

availability of technology alternatives, and Internet use policy issues. The studies provide scientific information in the formulation and implementation of policy impacting the provision of infrastructure and technology as well as impacting digital economy market efficiency. The research also supports USDA's management of its rural loan and grant, distance education, and telemedicine programs for broadband Internet service provider programs. The research is ongoing and the latest ERS publication can be found at: <http://www.ers.usda.gov/publications/eb-economic-brief/eb23.aspx>

2. Conservation Programs and Practices

The Phase 2 and Phase 3 surveys include questions about on-farm conservation practices and conservation program participation. ERS uses these data to help inform the design of conservation programs and to produce economic research on the effects of programs and practices.

Recent conservation research

Additionality in conservation programs. The Federal Government spends more than \$6 billion a year on voluntary conservation programs to encourage the adoption of a wide range of conservation practices that address multiple environmental and resource conservation goals. However, payments lead to improved environmental quality only if the farmers and ranchers who receive them adopt practices that they would not have adopted without the payments. This research uses ARMS data to measure “additionality”—the extent to which payments cause adoption of practices—for a set of common conservation practices. It also examines how to target payments to increase additionality. <https://www.ers.usda.gov/publications/pub-details/?pubid=45245>

Managing nitrogen use. Nitrogen is a critical input in agriculture, enabling farmers to produce high yields profitably. However, nitrogen compounds released into the environment are a source of many environmental problems, including eutrophication and hypoxia in aquatic ecosystems, visibility-impairing haze, and the loss of biodiversity. ERS used Phase 2 ARMS data to assess nitrogen management on eight major field crops. The study focused on the adoption of three “best management practices” (BMPs), applying nitrogen at an appropriate rate, accounting for all other sources of nitrogen; application as close to the time that the crop needs it as practical; and using methods to incorporate nutrients into the soil, to reduce runoff and atmospheric losses. While all three BMPs were realized on over a third of planted acres, substantial amounts of production fell short, leading to excessive nitrogen expenses and to environmental damages. The study estimated the extent to which improvements in management are needed, and assessed alternative policy mechanisms for improving management. (<https://www.ers.usda.gov/publications/pub-details/?pubid=44919>)

Environmental compliance with farm programs: Farmers who receive direct commodity program payments are required to comply with provisions of the programs aimed at land and wetland conservation, known collectively as environmental compliance requirements. Some farm bill proposals called for sharp reductions in direct payments; with no other changes to current law, reductions in direct payments would also reduce compliance incentives and potentially worsen environmental quality. This analysis used ARMS and other data sources to assess the impact of proposed reductions on compliance incentives, and to evaluate alternative policy initiatives that would improve conservation incentives. <https://www.ers.usda.gov/publications/pub-details/?pubid=44669>

Integrating conservation and commodity payments: The Conservation Stewardship Program, enacted as part of the 2008 Farm Act, provides performance-based conservation payments. These payments offset the cost of adopting new conservation practices and provide support to producers who have already achieved a high level of environmental performance. The program was introduced after the release of an ERS report that used an ARMS-based model to evaluate the design options for such a program. The model provided insight on (1) trade-offs between environmental gain and income support in a performance-based conservation program and (2) the distribution of support across farms compared to the support provided by existing commodity programs. <https://www.ers.usda.gov/publications/pub-details/?pubid=45851>

Current conservation research with ARMS data

Evaluating grassland conversion. Grasslands, particularly native grasslands in the Northern Plains, are important breeding habitat for ducks and other migratory waterfowl. About half of all ducks in North America are born in the Prairie Pothole Region—an area of vast grasslands interspersed with small wetlands. In recent years, higher prices for crop commodities may be encouraging farmers to expand crop production onto these grasslands, therefore destroying the habitat. Data gleaned from these questions will help in understanding the magnitude of these conversions and can be used to help devise programs to preserve grasslands. In the Western Corn Belt and Northern Plains, for example, the Fish and Wildlife Service (FWS) and USDA often purchase easements against cropland conversion on grassland that is also valuable wildlife habitat. These easements are purchased only from willing sellers and allow producers to continue grazing without restriction. <https://www.ers.usda.gov/publications/pub-details/?pubid=44880>

3. Research Focused on Livestock

ARMS Phase 3 livestock versions (dairy in 2000, 2005, 2010, and 2016, broilers in 2006 and 2011, and hogs in 1998, 2004, 2009, and 2015) provide detailed enterprise level changes that support reporting and analysis on policies and economic developments related to livestock production.

Recently published research

The transformation of the U.S. hog sector. Hog production was dramatically transformed in the 1990's and 2000's, as production shifted to larger and more specialized farms that were integrated into a chain of production with the use of production and marketing contracts. The transformation also featured the rapid expansion of new production practices in the industry. In 2013, ERS researched data from ARMS hog versions for 2009, 2004, 1998, and 1992 to show how the industry's structure shifted, and to estimate the impacts of the shifts on resource use, productivity, industry production costs, livestock and pork prices, and the industry's environmental performance. This 2013 ERS report confirmed that the productivity gains from expanded scale and the use of new technologies were largely exhausted by 2009, and that any future gains would require new innovations. Absent new innovations, future pork cost and price movements would be driven by changes in input prices and consumer demand, with much less of a role for productivity growth. <https://www.ers.usda.gov/publications/pub-details/?pubid=45151>

Organization, costs, and risks in broiler production. U.S. production of broilers grew rapidly until the mid-1990s, but growth then began to slow and production declined in 2009, with very modest growth since then. The industry's distinctive organization—with a high degree of vertical integration, nearly complete reliance on contract growers to raise chickens for poultry

companies, and grower compensation based on relative performance—helped fuel growth in the early period, and growth provided good returns and low risks for growers. However, slowing growth has placed new financial pressures on the industry and its organization. The industry is the subject of several important policy debates relating to competition, environmental regulation, international trade, and public health, which require an understanding of its organization. ERS used ARMS data to delineate the key features of the industry's organization and to analyze the industry's recent financial and productive performance, with a focus on contract growers.

<https://www.ers.usda.gov/publications/pub-details/?pubid=43872>

Economics of Antibiotic Use in U.S. Livestock Production: U.S. livestock producers have provided antibiotics in animal feed to treat animal diseases, prevent the spread of disease, and enhance feed conversion. But widespread antibiotic use—in and outside of agriculture—can lead to increased human health risks if it encourages the spread of microbes that are resistant to antibiotic treatment. As a result, the US Food and Drug Administration will phase out the use of antibiotic drugs for growth promotion, and major food retailers are changing procurement practices and requiring suppliers to limit the use of antibiotics in livestock production. ERS research used ARMS data to estimate the extent of antibiotic use in livestock production, measure the impacts of growth promoting antibiotics on production and farm-level costs, identify the production practices and equipment used by farms that are not using growth-promoting antibiotics, and evaluate the likely impacts of restrictions on livestock and meat markets.

<https://www.ers.usda.gov/publications/pub-details/?pubid=45488>

Changing Structure, Financial Risks, and Government Policy for the U.S. Dairy Industry.

Congress initiated a major change in dairy policy in the 2014 Farm Bill, by introducing a new margin protection program (MPP) in place of the combination of three programs aimed at countercyclical payments, dairy product price supports, and dairy export incentives. The shift occurred against a continuing major shift of production to larger farms, and a set of changes in product and input markets that are leading to widening product and input price risks. The MPP aims to limit the impact of those price risks, without reducing the industry's competitiveness and efficiency. ERS used ARMS data to measure how structural change in dairy farming affected industry production costs, and to evaluate the financial risks posed to dairy farmers by product and input price movements. The research forms an important component of the evaluation of the new dairy policy. <https://www.ers.usda.gov/publications/pub-details/?pubid=45522>

What's Driving Economic and Financial Success of U.S. Cow-Calf Operations? Cow-calf production is widespread and economically important throughout the U.S. Most farms are small part-time operations and producers have a diverse set of production goals. The economic performance of these operations varies by region, farm size, and use of production and management practices. We use ARMS cow-calf survey data to evaluate the drivers of farm financial performances. Our model links the "levers" of profitability (ROE)—operating profit margin, asset turnover, and inverse solvency—across five production regions reflecting different cow-calf production technologies and management practices. We find higher ROE in the Northeast and West, on larger farms with more harvested acres, on diversified farms, on farms where operators and spouses work off farm, and on farms that adopt feed technologies and advanced farm management and breeding practices.

<https://naldc.nal.usda.gov/naldc/download.xhtml?id=59617&content=PDF>

4. Crop Production Practices and Costs

Phase 2 of the survey provides data on production practices for specific targeted crop commodities. Farms in Phase 2 are surveyed again in Phase 3 for information on whole-farm production and finances and farm household attributes. Uses of the data include:

Production practices. The 2017 ARMS production practices data for wheat will be summarized and published on the ERS website for public use. Data users can generate customized summaries using this innovative web data tool. These data underlie federally mandated estimates of chemical use on major field crops, and also provide a perspective on trends in the use of seeds, precision agriculture adoption, and conservation tillage. The tool for accessing the ARMS production practice data can be found at: <http://www.ers.usda.gov/data-products/arms-farm-financial-and-crop-production-practices.aspx>

Crop insurance indemnities: USDA's Risk Management Agency (RMA) uses crop planting costs summarized from ARMS Costs of Production (COP) data to evaluate prevented planting and replanting payment rates (percent of total insurance coverage) that crop insurance policies would pay.

Fertilizer demand: Fertilizer providers use estimates of application rates, derived from ARMS crop surveys, to help gauge fertilizer demand in different regions, and to plan production and delivery schedules.

Economic damages: USDA's Office of Civil Rights uses COP costs and returns data to determine economic damages in cases in which discrimination has been found in USDA programs. The primary example is in Farm Service Agency (FSA) civil rights complaints (when people are denied loans or other benefits or there has been a delay in processing loans or other benefits to the point that there was an adverse impact upon their farming operations). Publicly available, defensible data are relied upon as the basis for analyses.

Recent ERS research on crops:

Multi-cropping practices. Over the last decade, growing demand for agricultural commodities has provided incentive for farmers to increase production. One way to increase production is to expand cropland acres; an earlier ERS study found that about one third of the recent expansion in corn acreage has come from hay production, grazing land uses, or Conservation Reserve Program (CRP) enrollment. Those shifts are not without environmental costs, since land in hay, grazing, or CRP provides important wildlife habitat as well as soil conservation and carbon reduction benefits. Double-cropping—the harvest of two crops from the same field in a given year—is another way to expand production. Researchers using ARMS data found that double cropping occurred on about 2 percent of cropland in most years between 1999 and 2012. Soybeans were the most common crop found on double-cropped acres, and winter wheat most commonly preceded these soybean plantings. However, regional and temporal variation is apparent in all double-cropping trends, reflecting local conditions and changing market incentives. Double cropping can limit the environmental consequences associated with cropland expansion, but it may have some negative environmental effects of its own. (<https://www.ers.usda.gov/publications/pub-details/?pubid=43865>)

Farm size and the organization of U.S. crop farming. Crop production has shifted to much larger farms over time. The increases have occurred steadily over the last three decades, and have occurred in almost all states and crops. Despite the shifts to much larger farms, most crop production is still carried out on family farms, in contrast to developments in some other

countries. This report documents the shifts to larger operations, and evaluates the separate roles played by technology, land attributes, risk-management strategies, and public policies in driving shifts to larger farms. The report also delineates the strengths of family organizations in agriculture, and identifies the factors that could undermine those strengths.

<https://www.ers.usda.gov/publications/pub-details/?pubid=45110>

Genetically engineered crops in the United States. This 2014 report found that 15 years after their first successful commercial introduction in the United States, genetically engineered (GE) seeds are now used on over 90 percent of U.S. corn, soybean, and cotton acres. ERS researchers used ARMS data to show that planting insect-resistant (Bt) corn and cotton is associated with higher net returns when pest pressures are high. The effect of herbicide tolerant (HT) adoption on net cash returns is more mixed; however, HT adoption is associated with substantial reductions in farm labor hours per acre, thus allowing farmers to raise household incomes through off-farm work or expanded farming operations. HT adoption is also associated with reduced tillage, which provides environmental benefits and further reduces labor requirements. Since the introduction of GE seeds, farmers have substantially reduced their use of insecticides on corn and cotton, and they have substituted glyphosate for more toxic and persistent herbicides. However, overreliance on glyphosate and a reduction in the diversity of weed management practices have contributed to the evolution of glyphosate resistance in some weed species. <https://www.ers.usda.gov/publications/pub-details/?pubid=45182>

Strategies to manage pesticide resistance in weeds: Glyphosate (Roundup) is an effective and widely-adopted weed-killing herbicide, but there is now widespread evidence of growing resistance to the chemical. ARMS data documents the spread of glyphosate use in soybeans, and the extent of resistance, in this NASS report with ARMS data:

http://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Ag_Resource_Management/ARMS_Soybeans_Factsheet/. Pesticide-resistant weeds can raise farm costs and reduce crop

yields. Scientists, extension specialists, crop producers, firms in the crop protection industry, and the USDA are conducting education campaigns, voluntary weed management initiatives, conservation activity plans, and herbicide rebate programs to promote the adoption of weed best management practices (BMPs). A 2015 ERS report used ARMS information to examine the extent of resistance, the impacts of resistance on the returns to crop production, the extent of the adoption of BMPs, the impacts of BMPs on production costs and returns, and the potential impacts of education campaigns and government and industry programs on the adoption of BMPs. <https://www.ers.usda.gov/publications/pub-details/?pubid=45357> ARMS data on practices, yields, and costs are used more broadly to plan strategies for pest management.

Adoption of genetically engineered alfalfa, canola, sugar beets. Annual USDA surveys track acreage planted to genetically engineered (GE) corn, cotton, and soybeans with traits for herbicide tolerance and insect resistance, but do not track planted acreage for other crops or traits. The 2013 ARMS Phase 3 gathered data on the use of GE seeds and traits for alfalfa, canola, and sugar beets, and ERS published estimates of GE adoption for those crops.

<https://www.ers.usda.gov/publications/pub-details/?pubid=81175>

Precision agriculture in crop production. Increasing numbers of producers are using information technology to fine-tune their production practices, decrease input costs, and increase yields. Farmers are organizing detailed within-field information on yields, soil characteristics, fertilizer and pesticide applications, and weather conditions using computer mapping programs. A global positioning system (GPS), the same technology that makes mobile road maps for vehicles, makes it possible to create these detailed maps as well as tractor guidance auto-steer systems. The maps can be used to regulate farm implement input

applications using variable rate input-application technologies (VRT). When first developed, VRT was envisioned as the most productive use of farm information technologies, but maps of field conditions have proven to be useful themselves in helping farmers manage field operations. Current ERS research uses ARMS data to evaluate these trends and their impact on farm financial performance, and provided information reported in the July 2014 issue of National Geographic Magazine. A video discussing these developments is found under the box "FOOD BY THE NUMBERS: What Happens When Farming Goes High-Tech?".

<http://video.nationalgeographic.com/video/food-by-the-numbers>

The Coexistence of Organic, Genetically Engineered (GE), and non-GE Crops: Consumer markets for non-GE corn and soybeans began emerging in the U.S. and elsewhere in late 1990s. In recent years, as GE varieties were introduced for alfalfa, canola, and sugar beets, markets for non-GE crops emerged there as well. Crops marketed as non-GE must use specific identity-preservation protocols, such as the use of practices, to prevent co-mingling with other crops during production and handling. Farmers receive a price premium for non-GE crop production to cover the additional expenses associated with these crops. In addition to segregation costs to prevent co-mingling, grain buyers may require use of lower-yielding food varieties and may set higher quality standards for these crops. Buyers may also reject non-GE crops if they test higher than the buyer-set tolerance level for the presence of GE material. Data collected in the 2013 ARMS are used to estimate the extent of non-GE production for identity-preserved markets, and the impacts on production costs and returns. The estimates are used to help evaluate the prospects for coexistence of nearby GE and non-GE crop production in the U.S. <https://www.ers.usda.gov/publications/pub-details/?pubid=44044>

5. ERS Cost and Returns (CAR) Estimates

ERS produces estimates of the commodity costs of production for hogs, milk, and cow-calf production, as well as for barley, corn, cotton, oats, peanuts, rice, sorghum, soybeans, and wheat. Baseline estimates are derived from data collected in Phase 2 and Phase 3 COP questionnaires directed to producers of target commodities in any given year. Baseline estimates are then combined with annual price, production, and acreage data to set cost and return estimates for later, non-baseline, years. Periodic new baselines are needed because changes in farm structure and technology can occur and change economic fundamentals. Cotton, oats, and hogs were targeted for baseline revisions in the 2015 ARMS, while corn and dairy producers were targeted in 2016. Commodity costs and returns data can be accessed at: <http://www.ers.usda.gov/data-products/commodity-costs-and-returns.aspx>

Recent CAR research

Corn and Soybean Production Costs and Export Competitiveness in Argentina, Brazil, and the United States. Argentina, Brazil, and the United States account for 88 percent of world soybean exports, and 93 percent of corn exports. International demand for corn and soybeans is expanding because of growing global consumption of pork and poultry. Comparisons of production costs across countries are useful because they allow decision makers to infer how the export competitiveness of each country and crop could be affected by changes to factors underlying production costs, such as land, fertilizer, seed, fuel, chemicals, transportation, and labor. ARMS provides the underlying data for the U.S. and the U.S. cost and returns framework was applied to data for Argentina and Brazil. <https://www.ers.usda.gov/publications/pub-details/?pubid=44093>

Wheat costs of production. Wheat, produced in nearly every part of the United States, is the third largest U.S. crop in terms of both value and acreage, behind corn and soybeans. The wide

variation of wheat production costs across the country reflected differences in yields, cropping practices, and costs of land, labor, and capital assets. Regional climatic differences across the United States accounted for much of the variation in the class of wheat grown, each with its own production practices and associated costs. Northern wheat producers, for example, chose spring wheat varieties that were harvested in the fall because winter wheat—planted in the fall for summer harvest—would be killed by the cold during its winter dormancy. Growers in areas with abundant rainfall were able to boost their yield potential by applying high rates of fertilizer. At the other extreme, some regions had areas so dry that costly irrigation was needed to produce a wheat crop.

<https://www.ers.usda.gov/publications/pub-details/?pubid=43786>

Production costs and rice sector consolidation. U.S. rice production has shifted from the Gulf Coast to the Mississippi River Delta and to non-Delta regions of Arkansas, and production has also shifted to much bigger farms as the total number of producers fell sharply. Changes in Federal policy, initiated in the 1996 Farm Bill, likely encouraged the geographic shift in production. Cost played an important role; ARMS cost of production estimates for 2009 show Gulf Coast production costs to be nearly 20 percent higher than other regions, with substantially higher costs for fertilizer, fuel, drying, and land. In turn, the smallest farms, with fewer than 250 acres planted to rice, realize production costs that exceed the largest farms by about 20 percent (on a per acre basis). California is also an important center of rice production, but they produce a different variety that incurs higher costs but yields higher returns.

https://www.ers.usda.gov/webdocs/publications/38491/6122_rcs11d01_1_.pdf?v=41056

6. Land Use, Tenure, and Transition

U.S. Farmland Ownership, Tenure, and Transition. In 2014, ARMS Phase 3 was combined with TOTAL—the Tenure, Ownership, and Transition of Agricultural Land survey, for the first USDA survey of farmland since 1999. The ARMS component of TOTAL gathered information from farm operators, while another component gathered information from non-operator landlords. The first ERS report from the survey examined patterns of farmland ownership, tenure arrangements, and channels by which agricultural land is transitioned among owners and renters. <https://www.ers.usda.gov/publications/pub-details/?pubid=74675>

1.5.3 Non-Financial Data in ARMS Phase 3

This survey also collects a considerable amount of nonfinancial data. Some, such as hours worked on the farm, or types of equipment or livestock housing, or quantities of feed delivered to livestock, are used to develop estimates of the costs of farm production—that is, they are used to develop complete cost information.

In some years, the survey also asks about production practices used on the farm, including manure management and animal breeding practices on livestock enterprises, marketing practices on crop enterprises, or Internet usage and procurement practices for the whole farm. These questions are driven by particular public policy issues, and their inclusion in ARMS allows us to link responses to farm financial data. As a result, we can link the usage of practices to the types of farms that use them and to the financial performance of farms.

The survey asks questions about the farm's ownership, organization, and legal status. Some of those questions are necessary to allow us to accurately track flows of farm income to stakeholders—such as farm operators, contractors, landlords, and equity holders—and thereby

provide better estimates of farm financial performance. The questions also enable us to track the changing nature of agriculture, as production continues to shift to larger and more complex enterprises.

ARMS Phase 3 contains questions pertaining to farm households—concerning not only their demographics, but also their off-farm income, health insurance, and consumption expenditures. These questions are included to meet increasing policy concerns related to the financial well-being of farm households, as well as issues related to access to health insurance in rural areas. They also enable ERS to assess the financial resources available to farm households and farm operations to meet often sudden and sharp changes in farm financial performance.

2 Terms and Definitions

2.1 General

Enumerators working on this survey should be familiar with the definitions of the terms listed below. To gain the most benefit from training, enumerators should review the definitions of these terms before attending the regional training workshop. A comprehensive list of Terms and Definitions used in all NASS surveys (including those below) can be found on the Internet under the following address:

<http://www.nasda.org/File.aspx?id=2467>

2.2 Economic and Cost of Production Terminology

- accounting, accrual
- accounting, cash
- acreage base
- acreage, eligible contract
- acreage, contract
- acreage, noncontract
- agricultural commodity
- agricultural production
- animal unit (AU)
- animal unit month (AUM)
- aquaculture
- area sample
- assessed value
- assessments
- assets
- auction pool

- balance sheet
- barrel (bbl)
- base acreage
- Bureau of Land Management (BLM)
- borrowing capacity

- call back
- carryover
- cash receipts
- cattle on shares
- check-off
- commission charges
- commodity
- commodity, contract
- Commodity Credit Corporation (CCC)

- confidentiality
- Conservation Reserve Program (CRP)
- conserving use
- contract
- contract, delayed pricing
- contract, forward
- contract, marketing
- contract, production
- contract sale
- contractee
- contractor
- Cooperative State Research, Education, and Extension Service (CSREES)
- Corporation
- cost of production
- cover crop
- cropland
- crop rotation
- cull

- date, due
- date, mailing
- date, reference
- date, release
- depreciation
- direct sales
- discount
- double crop
- drip irrigation

- editing
- Employee Identification Number (EIN)
- Environmental Quality Incentives Program (EQIP)
- equity
- estate
- expenditure
- expenses, capital
- expenses, operating
- expenses, production

- fallow
- farm
- farm, contract
- farm, corporate
- farm, institutional
- farm, noncontract
- farmstead
- Farm Service Agency (FSA)
- Federal Agriculture Improvement and Reform (FAIR) Act
- feeder
- fertilizer
- field
- financial health
- finish
- flat
- flexibility contract, 7-year production flexibility contract
- forage
- forward pricing
- free-of-charge
- fringe benefits
- futures market

- government program land
- grazing land association, public or industrial (PIGA)
- grazing allotment
- grazing association
- grazing fee
- greenhouse
- gross value

- harvested acres
- hay
- hedging
- herbicide
- hired manager
- household

- hundredweight (cwt)
- idle land
- implement
- improvements
- inaccessible
- income, gross farm
- income, net cash farm
- income, net farm
- income, non-farm
- income, off-farm
- input
- input provider

- landlord
- landlord, non-operator
- landlord, operator
- liability
- liquidity
- loan, marketing
- loan, marketing assistance
- loan, nonrecourse

- market value
- military time

- Natural Resources Conservation Service (NRCS)
- net worth
- nonresponse
- nursery

- oilseed crops
- on feed
- operating arrangement
 - individual
 - managed
 - partnership
- operator
- orchard
- out-of-business

- partner
- pasture
- patronage refund
- payment, advanced
- payment, cost-share
- payment, disaster
- payment, final

- payment, incentive
- payment, loan deficiency
- payment, transition
- payment limitations
- payment quantity
- payment yield
- pesticide
- planting flexibility
- pick your own (U-Pick)
- power-take-off (PTO)
- premium
- primary name
- processor
- production expenses
- production flexibility contract
- production flexibility contract payment
- questionnaire
- rangelands
- ratio, debt-asset
- ratio, parity
- real estate
- refusal
- rent
- rent, cash
- rent, share
- respondent
- retired
- salary
- sample, list
- sample, probability
- sampling frame
- sampling unit
- secondary name
- seed
- sharecropper
- shrinkage
- small grains
- solar energy
- sold-out
- solvency
- straw
- subsidy
- survey
- survey period
- survey, statistically defensible
- tenant
- wages
- water rights
- wetlands
- Wetland Reserve Program (WRP)
- woodland
- work, agricultural
- work, contract
- work, custom
- work, service
- worker
- yardage

2.3 Livestock Production Categories

The following livestock production categories are located on page 2 of the Respondent Booklet. The codes are for use in Sections 19-21.

2.3.1 Hog Contractee Operations

Farrow to Wean (Code 802) – This operation oversees the breeding of sows or gilts and the farrowing of their litters. The contractee will feed and care for the pigs for about 16 to 20 days, until they reach 12 - 14 pounds. The weaned pigs will be moved to a nursery and/or grower operation and the sows will either be bred again or go to slaughter.

Farrow to Feeder (Code 805) – This operation oversees the breeding of sows or gilts and the farrowing of their litters. The contractee will keep the pigs for approximately 6 weeks, until they reach 35 - 45 pounds. The pigs will be moved to a finishing operation and the sows will either be bred again or go to slaughter.

Farrow to Finish (Code 807) – This operation oversees the breeding of sows or gilts and the farrowing of their litters. The contractee will keep the pigs and finish them out until they reach market weight. The sows will either be bred again or go to slaughter.

Nursery (Code 806) – This operation only handles young pigs. Pigs from 12 - 14 pounds are received, fed, and cared for until they reach 35 - 45 pounds. They are then transferred to a finishing operation.

Nursery/Finish (Early Wean, ISO Wean, SEW Pigs) (Code 808) – This operation receives pigs around 12 - 14 pounds and finishes them until they reach market weight. ISO Wean stands for “Isolation Weaning”. SEW Pigs stands for “Segregated and Early Weaning”.

Finisher (Feeder to Finish) (Code 809) – This type of operation will receive pigs that average about 35 - 45 pounds and finishes them until they reach market weight.

Other Hogs and Pigs (Code 804) – This category includes a range of different types of operations. An example is an operation that receives gilts or boars only and feeds them until ready for breeding.

2.3.2 Chicken Contractee Operations

Broiler Growout (Code 916) – Contractees raise meat-type strain chickens from newly hatched chicks to processing weight. It is common practice to raise female or male flocks separately (see code 939 below). Includes Cornish and roasters.

Pullets for Hatchery Supply Flock Replacement (Code 926) – Pullets are raised from newly hatched chicks to about 15 to 22 weeks for layer flock replacement. Almost all pullets for broiler hatchery supply flock replacement are raised on production contracts.

Pullets for Table Egg Flock Replacement (Code 925) – Pullets are raised from newly hatched chicks to about 14 to 20 weeks for table egg flock replacement. Under a production contract, the hatchery or egg producer retains ownership of the birds.

Fertile Hatching Eggs (Code 921) – Producer cares for layers and gathers eggs, which go to a hatchery. Virtually all broiler - type hatching eggs are raised by a production contract. Some respondents say they have a 'broiler' contract because they are paid by a broiler company. Be careful not to confuse an egg producer with a broiler growout contractee. Most EGG - type hatching eggs are produced by production contract, with the hatchery retaining ownership of the birds.

Table Eggs (Code 920) – Producer cares for layers and gathers unfertile eggs, which go to a processor or an egg breaker. To be considered a production contract, the egg processor or egg breaker would own the birds. Sometimes partners, such as feed mills, are involved, and all partners claim ownership of the birds.

Broilers, Chicks, Hatchery Run (Code 935) – Broiler chicks less than 3 days old direct from the hatchery. Normally, these are sold to small operations under a marketing contract (NOT a production contract). Exclude integrated contractor delivered birds to be raised under a production contract.

Roosters, Meat Type (Code 939) – Domestic chicken males raised from chicks to breeding age of approximately 25 weeks that will be used for meat. For the most part, these should be recorded as broilers unless they are kept for research purposes.

Roosters, Breeding Flock (Code 940) – Domestic chicken males raised from chicks to breeding age of approximately 25 weeks and will be moved to a hatchery flock.

2.3.3 Turkey Contractee Operations

Turkeys Growout (Meat Type) (Code 969) –Contract to raise turkeys for meat production. The contractee will raise turkeys from poults received at 6 weeks of age from a brooder operation (growout operation) to market weight. Contract fee for this work is smaller than Code 970.

Turkeys All In/All Out (Meat Type) (Code 970) –Contract to raise turkeys for meat production. The contractee will raise turkeys from newly hatched poults to market weight. Contract fee for this work is larger than Code 969.

Turkeys (Meat Type) Brooders (Code 967) – Brooder operations grow the chicks for about 6 weeks. After 6 weeks, the birds are moved to another facility (code 969) where they are grown out to market weight.

Poults Breeding Flock (Code 938) – Poults are raised from newly hatched chicks to laying age for the purpose of breeding stock replacement.

Eggs, turkey hatchery (Code 919) – Producer cares for turkey layers and gathers eggs which are separated into either a meat type turkey flock or a breeding flock.

3 Survey Procedures

3.1 General

This chapter provides an overview of the questionnaire(s) and other materials. General guidelines for collecting data are also discussed in this chapter. Administrative matters are covered in the NASDA Enumerator Handbook. The handbook is available online at:

<http://www.nasda.org/File.aspx?id=2193>

3.2 Survey Materials

You will receive the following from your Regional Field Office:

- Questionnaires with labels identifying the assigned operations.
- Extra questionnaires without labels.
- Respondent Booklets containing Code tables and the survey cover letter that was sent to respondents.
- Supplements for questionnaires you are assigned.
- Envelopes for mailing completed questionnaires.
- Other materials may also be provided by your Regional Field Office or State Office.

You should have these materials on hand:

- Interviewer's Manual (sent from RFO and/or found on NASDA.org)
- Highway and/or street maps
- Black lead pencils
- Name tag
- NASDA Identification Card
- NASDA Employee Handbook
- Calculator
- Clipboard

3.3 Questionnaire Versions

<u>Version</u>	<u>Color</u>	<u>Version Number</u>
Costs and Returns Report (CRR)	Blue	1
Wheat Costs and Returns Report	Brown	2

The Face Page of the questionnaire contains the target operator and partner labels. Pre-screening of target operators was done during Phase 1. Any previously reported data from Phase 1 (for List records) and June Area Survey (for NOL records) that is again asked in Phase 3 will be printed next to the question in the questionnaire. Screening is discussed in Chapter 4 of this manual.

3.4 Respondent Booklet

The Respondent Booklet contains information respondents need to reference when answering some survey questions, such as Code Lists. Since most versions are mailed to operators, most tables in the Respondent Booklet have been added to the questionnaire.

Tables remaining in the Respondent Booklet are the Crop Codes, Livestock Codes, List of General Business Expenses, Value Codes, and Grain Conversion table. Also, the Cover Letter that was included in the questionnaire mailing to operators has been placed on the front page of the Respondent Booklet.

3.5 Respondent Burden

Headquarters recognizes that this survey poses a heavy burden on respondents. The Sampling and Frame Development Section strives to minimize the burden on respondents in terms of multiple contacts per year and consecutive contacts from one year to the next. For the list sample, a special burden reduction procedure is used prior to selecting the screening sample to minimize most overlap with other major surveys (Crops APS, Hogs, Cattle, Labor), as well as ARMS from the previous year. However, there are situations where duplication with other major surveys is unavoidable.

You will reduce the reporting burden on the respondent if you are thoroughly familiar with the questionnaire and instructions. Follow "Go To" instructions carefully to avoid asking questions needlessly. If "Go To" instructions do not appear after an item, continue with the next item.

Also be aware of the estimate of average completion time in the burden statement. This figure is determined by either the actual average time from previous interviews or what NASS and the Office of Management and Budget (OMB) think the average completion time will be. The OMB is an agency that is required to review and approve all surveys conducted by the Federal government.

3.6 Entering Data

Use a black lead pencil to record data and make notes; never use ink on a questionnaire. Make all entries clear and easy to read. Entries in check boxes and Item Code boxes must be entirely inside the boxes.

Record responses in the unit required (such as acres, bushels or dollars). If a respondent gives an answer in a different unit, write the answer outside the printed box, convert it to the required unit, and record the converted data in the box. If the answer is "none", check the "none" box. Record all zeros (unless instructions indicate to enter a specific Code to indicate none or zero, such as when using Value Codes).

Make sure to record data to the nearest whole number, unless a decimal point is printed in the box. Locate numbers correctly in relation to decimal points, and fill in every space printed after the decimal. Use zeros as fill when answers are not given to as many decimal places as required, or are given in whole numbers.

If answers appear unreasonable but are valid, make notes in the margins or on the notes pages to explain. Do not write notes or make unnecessary entries in answer boxes.

3.7 Planning Your Work

The operator and/or operation name, mailing address and identification number are on the questionnaire label along with any other information the Regional Field Office has that might be helpful.

Mark the location of each operation assigned to you on a map before you begin the survey. Show the location by a small circle with the ID number or target operator name (or operation name) written beside it. Use this map to plan your daily travel; this will help keep travel expenses down and save time.

If you cannot locate an operator at the address on the label, utilize other sources in your area to help locate the operator. Try to do this early in the survey so you can put the information on your map as soon as possible. If you need additional assistance, contact your supervisor or Regional Office staff.

3.8 Interviewing

Interview the farm operator, if possible, because information collected from other people often is less accurate. However, if the operator says someone else is more knowledgeable, interview that person.

The ARMS Phase 3 is very detailed, which often requires an interview to be completed in person. It is advisable to call or visit each operator early in the survey period to set up an appointment to complete the interview at his/her convenience. During this initial contact, explain the survey purpose and importance, the scope of the interview and that it will be beneficial for them to have their farm records available during the actual interview.

If the operator will not be available before the survey is over, try to interview someone who is well informed about the operation. A partner, family member or employee may know enough about the aspects of the farm operation covered in the questionnaire to give you the information needed.

The NASS rule-of-thumb is to make up to three attempts (the first visit plus two call backs) if necessary to get an interview. If you have an appointment or information from a neighbor on when to try to reach the operator, obviously you should return then. If not, make each visit at a different time of the day.

Respondents often ask how long the interview will take. Never contradict the burden statement; however, it is okay to add to it. For example, you might say: "The official nationwide average for this survey is 100 minutes, but the interviews I have done in this area averaged about ____ minutes." Be honest about the average time, even if your interviews are averaging longer than the time estimate in the burden statement.

Put the respondent at ease about time and burden. Respondents are often not experts about their own finances and may not have their records in order. Because you know the survey questions well, you will be able to help farmers find most of the information in their books or

records. Make sure they understand you are helping them find the answers, not quizzing them on their records. Your expert knowledge of this survey will help minimize their effort while maximizing the quality of the data collected.

Encourage respondents to have their farm records at hand. If records are used, accurate information will be readily available and answering will take less interviewing time.

Always begin by reading questions exactly as they are worded in the questionnaire. You may also use any optional wording or explanations printed in the questionnaire. If the respondent still does not understand, or asks you to explain, then use what you learned in training and information from this manual to explain what is needed.

Ask questions in the order they appear in the questionnaire. Do not skip any questions unless instructions allow you to do so. Sometimes respondents will volunteer information you need later in the interview. When you get to a question the respondent already answered, take the opportunity to verify the information. Say something like, "I think you told me this earlier, but let me be sure I got it right." And then ask the question. This shows the respondent you were paying attention earlier and that you want to get things right.

Sometimes you will need to probe in order to get an adequate answer to a question.

You should probe when:

- the respondent cannot answer the question,
- the answer is not exact enough to record,
- the answer may be incorrect because it does not fit with the information already obtained
- you think the respondent did not understand the question.

The purpose of probing is to verify unusual data or to correct misreported data. Be careful when you phrase your probing questions that you do not influence the respondent's answers. Probes should be "neutral". That is, they should not suggest one answer over another. In fact, all questions should be asked in a neutral manner. Do not say things like, "What do I mean by marketing contracts? Oh, you must not have had any, did you?" Instead, say, "During the year, did this operation have any livestock marketing contracts for livestock raised?"

In another example, if a respondent tells you an expense is between two amounts, such as, "Oh, I guess the total was between two and three hundred dollars," you should ask, "Would you say it was closer to \$200 or \$300, or what amount exactly?" Probing is especially important early in the interview when the respondent is 'learning' from you what level of effort and accuracy are ideal. If you fail to probe, you may be suggesting that good answers are not needed.

Strike a balance between motivating the respondent to search out sound numbers and taxing the respondent to account for every nickel. Probes should also be "non-threatening." Be careful you do not appear to be questioning or challenging the respondent's answers. Do not say, "That can't be right! You just said you had 20 pigs, so your vet expense couldn't have been that high!" Instead, say, "Earlier you said that you had 20 pigs during the year. Can you tell me why your vet expenses were so high?" And then make notes of the respondent's answer.

The importance of good notes cannot be overemphasized. Notes are especially important when you find unusual situations or the respondent explains why information that seems incorrect actually is correct. Good documentation saves the Regional Field Office from having to re-contact the farmer to confirm the accuracy of the data. Also write down any complicated calculations you make to come up with an answer. These notes will help the survey statistician understand this operation when reviewing the questionnaire. Make sure the notes are clear and can be read. Never erase a note unless it is wrong. **Notes are the single most valuable editing tool available to the survey statistician!**

After completing each interview, be sure to review the questionnaire while the interview is still fresh in your mind:

- check all the answers for correctness and completeness,
- double-check your calculations, and
- make sure your notes are legible and make sense.

3.9 Fiscal Year versus Calendar Year

The questionnaires are designed to collect expenses and income for the calendar year. However, some farm businesses keep their books on a fiscal year basis, such as October 1-September 30. In these cases, collect information for the operation's fiscal year and make a note on the questionnaire indicating the time period of the operation's fiscal year.

3.10 Non-Response

If an interview cannot be conducted, explain why on the questionnaire. Make a note about whether the operation appears to be a farm and any other information you think might be helpful to the Regional Field Office.

Most farmers are willing to cooperate on NASS surveys, but in every survey some will refuse to do so. The key to reducing the chances of getting refusals is to be courteous and friendly, but persistent. Most respondents will greet you with basic questions about the survey. Be prepared to answer their questions confidently and concisely. Respondents will want to know what the survey is about, how long it will take and why they should report. Remember that during a Census year, completing the ARMS Phase 3 fulfills their mandatory Census of Agriculture obligations. You should develop and practice an introduction with which you feel comfortable. Your introduction should explain the purpose of the survey, the need for accurate agricultural statistics, and the confidentiality of the data. Make use of materials on the survey purpose provided at your Regional/State training workshop.

Above all, do not become discouraged when you get a refusal. Stay in touch with your supervisor. Continue to meet farm operators with ease, friendliness and optimism as you contact other respondents in the sample.

3.11 Supervision

Your supervisor will set up an appointment to meet with you early in the survey. This visit will help you get off to a good start by spending some time to review a few of the interviews you

have completed. Hold all your completed work until this review takes place unless you are instructed to do otherwise.

Your supervisor, or someone from the Regional Field Office, will contact a few of your respondents to conduct a quality check. The quality check will verify that you spoke with the person named in the questionnaire and that the respondent understood the survey procedures.

3.12 Completed Questionnaires

Turn in your completed questionnaires according to the instructions you receive from the Regional Field Office. If you think that under these procedures the last few questionnaires you complete might not reach the Regional Field Office before the final due date, call your supervisor.

4 Face Page and Screening

4.1 Face Page

4.1.1 Introduction

Before approaching the farm operator, develop and practice an introduction with which you are comfortable. In the introduction include who you are, whom you represent and the purpose of the survey. Become familiar with the information in Chapter 1 of this manual and be prepared to answer general questions about the survey.

During your introduction, be sure to remind the respondent that all the data are confidential and used only in making State, Regional and National estimates. In preparing for the interview, mention that using farm financial records (including milk checks, co-op statements, FSA records, etc.) are extremely helpful. These records do not have to be in perfect order to be useful. Make sure the respondent knows you will be conducting several of these interviews so you know the questionnaire very well and will help them find the answers in whatever records are available.

If the operator has multiple operations, only one operation is selected for this survey. For these situations, it is beneficial to recognize which operation has been selected so the operator can obtain the records for that particular operation. The label and preprinted screening information are helpful in this determination. It is important to keep in mind which operation is selected throughout the interview. Only the acreage, crops, livestock, income, expenses, assets, and debt for that selected operation are collected on the questionnaire. Assets, debt, and net cash income from all other operations are collected in Section 37 on the farm household.

Often when making the initial contact on this survey, you are only setting up an appointment to complete the questionnaire at a later date. If the Regional Office has included a Screening Supplement with a particular questionnaire **it is best to complete it on this first contact**, because you may find out information about the operation you need to discuss with the office. This procedure gives you plenty of time to contact the office before doing the full interview. Account for the screening time in notes so the interview beginning or ending time can be adjusted to more accurately reflect total interview time.

4.1.2 Target Label (All Versions)

123456789012345678901234567890123456789
 Line 1 **Survey Code = AA BBBB BBBB CCCCC**
 Line 2 Barcode |||
 Line 3 Barcode |||
 Line 4 Barcode |||
 Line 5 Barcode |||
 Line 6 **ID 12345678901** AA BB C DDD F EE QQ PPP
 Line 7 GG HHH II JJ KKK-KKK-KKKK L MMM NNN RRR
 Line 8 SSS-SSS-SSSS TTT OOOO
 Line 9 Sequence Number
 Line 10 Blank Line
 Line 11 Operation Name
 Line 12 Person Name
 Line 13 Street Address
 Line 14 Place Name ST 12345-6789

<u>Line</u>	<u>Col.(s)</u>	<u>Field</u>	<u>Description</u>	<u>Prism Table.Field Name / Value</u>
1	1-17		Survey Code =' (BOLD)	Value = `Survey Code =`
2-5			Barcode Layout Contains:	
	1-11		State Reporting ID (11 digits) (BOLD)	Reporter.State_poid
	12-13		Tract (2 digits)	Reporter.Tract
	14-15		Subtract (2 digits)	Reporter.Subtract
	16		Questionnaire Version (1 digit)	Reporting_Unit.Questionnaire_version
	17-19		Survey Identification Code (3 digits)	Survey.Survey_code
	20		Blank (1 digit)	
6	1-2		'ID'	Value='ID'
	4-14		State Reporting ID (11 digits) (BOLD)	Reporter.State_poid
	16-17	A	Tract (2 digits)	Reporter.Tract
	19-20	B	Subtract (2 digits)	Reporter.Subtract
	22	C	Questionnaire Version (1 digit)	Reporting_Unit.Questionnaire_version
	24-26	D	Survey Identification Code (3 digits)	Survey.Survey_code
	27	F	Blank Barcode Filler (1 digit)	
	28-29	E	Scoring Indicator (2 digits)	
	34-35	Q	Manager Flag	Value='MM' based on Opdom_status
	37-39	P	Multiple Operation Flag	Value='ZZZ' based on Opdom_status
7	1-2	G	District Code (2 digits)	Reporting_Unit.class3_code
	4-6	H	Op County Code (3 digits)	Reporter.Op_county_id
	8-9	I	Op Dom Status (2 digits)	Reporter.Opdom_status
	11-12	J	Active Status (2 digits)	Reporter.Active_status
	14-25	K	Phone Number (10 digits)* <i>*Suppressed on mailed questionnaires</i>	Reporter.telephone_number (digits 1-3)-(digits 4-6)-(digits 7-10)
	28	L	Comment Flag	
	30-32	M	Supervisor Code (3 digits)	Reporting_Unit.class1_code
	34-36	N	Enumerator Code (3 digits)	Reporting_Unit.class2_code
	38-40	R	County Code (3 Digits)	Reporter.county_id
8	14-25	S	Phone Number (10 digits)* <i>*Suppressed on mailed questionnaires</i>	Reporter.oper_phone (digits 1-3)-(digits 4-6)-(digits 7-10)
	33-36	O	Sequence Number (4 digits)	Reporting_Unit.Subgroup3
	27-29	T	Method Code (3 digits)	
9	1-12		Sequence Number	Machine Sequence
10			Blank Line	
11	1-30		Operation Name (30 digits)	Reporter.Operation_name
12	1-30		Person Name (30 digits)	Reporter.Person_name
13	1-30		Street Address (30 digits)	Reporter.Addr_delivery
14	1-18		Place Name (18 digits)	Reporter.Place_name
	20-21		State Abbreviation (2 digits)	Reporter.State_abbrev
	23-32		Zipcode (9 digits)	Reporter.Zip5 (digits 1-5)-Zip4(digits 6-9)

4.2 Screening Information

A screening survey (ARMS Phase 1) was conducted on the sampled operators to determine their operating status for the reference year. Area frame records were screened during the June Area Survey. The National Processing Center (NPC) will print any of this previously reported data in the questionnaire, next to the appropriate question. This pre-printed information on the questionnaire is used to help you make sure you are interviewing the correct sampled operation.

The following pre-printed information will be from the Phase 1 Survey or June Area Survey:

- Who responded to the screening interview (operator, spouse, etc.)
- How the screening interview was completed (mail, phone, etc.)
- Was the screening interview complete or did it have to be estimated
- Owned land
- Land rented to others
- Land rented from others
- Total acres operated
- Total cropland acres

These eight items can be used during the interview in one or more of the following manners.

- You can ask the question to the respondent, and compare their answer to the response from the screening survey. If there is a discrepancy, verify that you have the correct answer.
- You can verify the pre-printed information. For example, you may ask "I have this operation's total land owned as 250 acres. Is this correct?"

4.3 Interview Completion Times

There are two methods to record the length of the interview: beginning and ending times and total time in hours. Interview times are used to determine how much respondent time was used (as a measure of respondent burden) to collect data. We are trying to reduce interview times as much as possible and still collect the high quality data we need. Accurate reporting of interview time is critical for monitoring and evaluating survey burden and cost.

4.3.1 Beginning & Ending Times

Record the **beginning time**, in military time (Item Code=0004 on the front page of the questionnaire), of the interview when the respondent agrees to cooperate on the survey and you actually start the interview.

When the interview has been completed, record the **ending time** in military time (Item Code=0005 on the back page of the questionnaire). If more than one person was interviewed or it took more than one appointment to complete the interview, times should reflect the approximate total time for the questionnaire.

Exclude the time you spend reviewing the questionnaire or verifying calculations by yourself after you have completed the interview. Be sure the ending time is after the beginning time entered on the face page.

4.3.2 Time in Hours

If multiple interviews occurred or multiple people were interviewed, the total interview time can be estimated, by recording the number of hours (to the tenth of an hour) in Item Code 0008 on the back of the questionnaire. **If Item Code 0008 is used, then do not use the beginning and ending times.**

4.4 List Frame – Verification of Sampled Operations

Questionnaires will be pre-labeled with names and addresses. If the first line (primary name line) of the label after the identification number line has an individual name (JOHN SMITH), this is the target name. If the first line contains a combination of individual names (JOHN AND BILL SMITH) or an operation name (SMITH FARMS), then the name on the next line (the secondary name line) is the target name. If the OpDom status is 99, then the operation listed on the first line is the target.

Remember: The target name NEVER CHANGES. The person actually operating the farm (the farm operator) may change, but the selected target (person or operation) name does not change.

The first thing you will do is verify the operator's (or operation's) name and address, and the names and addresses of any known partners. If there are partner labels, be sure the partner names and addresses are correct, and all partners are listed. Make any updates, deletions, or additions to the partners.

4.5 Area Frame – Verification of Sampled Operations

All of the area frame samples selected for the survey were identified as farm operators during the June Area Survey.

We are interested in the operation the way it existed on June 1, so ignore any changes that have occurred in the operation since June 1. For example, if the tract was individually operated in June and changed to a partnership in September, collect data for the individual operation for the time it existed (January through August). Do not collect any data for the partnership.

Collect data for the operation as it existed on June 1.

We know that by using this rule we will lose some data for those few farms or ranches that were formed after June 1. However, there usually are not very many of these operations and they are generally relatively small. Therefore, they would not have much impact on the overall estimates from the survey.

If you find an error was made in June (the operating arrangement was incorrectly identified), make notes to explain the error, but complete the questionnaire for the operation **as it actually existed on June 1**. *If you have time between your first contact with the respondent (when you find out the June report was wrong) and your appointment to complete the survey interview, call the Regional Field Office and let them look up the corrected operating arrangement. If it is overlap with the List, you will not have to do an interview.*

4.6 Screening Box on Face Page

If the respondent reports the target name is no longer farming, complete the Screening Supplement. Changes may have occurred if screening data were collected from someone other than the operator on the ARMS Phase 1 or June Area Survey or the information that was obtained was incomplete.

4.6.1 Completing the Screening Supplement

Farm operations in each State were sampled for the ARMS based on List Frame information about crop acreage, livestock inventory, and an estimated gross value of farm sales. Agri-business firms and agricultural services that do not have crops or livestock of their own should have been excluded from the sample, but it is possible some records were misclassified. Screening questions determine the eligibility of the selected name for this survey.

Institutional (Abnormal) operations such as prison farms, private or university research farms, not-for-profit farms, and Indian reservations are out-of-scope for ARMS and should be excluded from the survey. If your assignment includes any of these farms, notify your supervisor or the survey statistician.

If an operation was in business during any part of the reference year, but went out of business during the year, **complete a questionnaire for the part of the reference year during which the operation did business**. If the operation was taken over by another operator or operation when it went out of business, make a note of this. This note should include a name, address, phone number and any other pertinent information.

Item 1 – Other Operation Name

Even though you have already verified the label, you need to ask this item to detect duplication and make sure the list is up-to-date. Indicate if this name should appear on the label in the future.

Item 2 – Crops, Livestock or Poultry

Check 'Yes' if the original target name grew any crops (field crops, fruit/nut crops, vegetables, oilseeds, specialty crops, hay, etc.) or had cattle, hogs, sheep, poultry or other livestock during the reference year on the total acres operated. If 'Yes', go to Item 7. If 'No', continue to Item 3.

For the target name to qualify as growing a crop, the target name must have made the decisions on planting, caring for and harvesting the crop.

Include: field crops, fruit and nut crops, vegetables, mushrooms, flowers, nursery stock, greenhouse crops, hay, Christmas trees, etc.

Exclude: home gardens and crops received as payment for land rented to someone else

This screening question would also be checked 'Yes' if the target name had any livestock or poultry, regardless of ownership, on the total acres operated at any time during the reference year.

Include:

- 1) All cattle, hogs, sheep, equine, goats, chickens, turkeys, ducks, geese, bees, rabbits, mink or other fur bearing animals, and fish that are raised commercially or for home consumption. FFA and 4-H livestock projects should also be included.
- 2) Operations that **own FIVE or MORE** pleasure horses and no other agricultural items.

Exclude:

- 1) Operations that have FOUR or fewer pleasure horses, and/or any number of other animals kept ONLY for pleasure use or as pets. For an operation to be excluded from ARMS, no other agricultural items (including hay produced on the operation) may be present.
- 2) Horse boarding operations, riding stables, or race horse training operations that
 - a) do not have other agricultural items (i.e. has hay produced on the operation or breeds horses) unless they have more than 99 acres of pasture, or
 - b) keep separate accounting books from the farming operation's accounting books. If the horse boarding, riding stable, or race horse training operation's income and expenses can be broken out from the traditional agricultural enterprises' income and expenses, exclude the horse boarding, riding stable, or race horse training operation.
- 3) Slaughter or packing houses, auction barns, stockyards or other buyers. These operations have livestock which are committed for slaughter. The presence of these livestock alone does not qualify an operation for the survey.

Item 3 – Sales of Ag Products or Receipt of Government Ag Payments

Include sales of crops, livestock, aquaculture and other products from the total land in the operation. **Include** any government payments received under the 7-year market transition program, conservation programs, etc.

This item should be answered 'No' when the target name is a landlord who sold agricultural products from or received government farm payments only for land which was rented out.

If this item is checked 'Yes', go to Item 7.

Item 4 – Idle Cropland and Pastureland

Target names with more than 99 acres of pastureland or 19 acres of idle cropland and no other agricultural commodities qualify as point farms. It is necessary to correctly identify these point farms to ensure their representation in the summary.

If this item is checked 'Yes', go to Item 7.

If Item 2, 3 and 4 are all 'NO', continue with Item 5.

Item 5 – Out-of-Business Determination

This item determines if anyone else is now operating the land formerly operated by the target name on the face page. Ask this item ONLY if the respondent answered 'No' to Questions 2, 3 and 4. If another operator has taken over the land from the target name on the label, record the name of the new operator and/or operation now operating the land.

If the respondent answers 'No' to this item, probe to determine what happened to the land and make notes.

Item 6 – Enumerator Action

These instructions ONLY apply in rare cases where the selected target name is out-of-business. If the answer to Items 2, 3 and 4 are all 'No':

- On the Screening Supplement, enter Code '9' for the Reporting Unit in Item 7 and Item Code 9921 on the face page of the questionnaire.
- On the face page of the questionnaire, enter Code '1' in Item Code 0006, if not already entered.

Go to the back page of the questionnaire, enter code '1' in Item Code 9901 and complete Date Completed, ending time, Respondent, Mode, and Enum codes, information.

Item 7 – Decision-Maker for This Operation

We are interested in how the operation was organized on a day-to-day basis. We do not care about the legal definition.. Definitions of individual, partnership, and managed land can be found in the Ag Surveys Interviewer's Manual. Landlord-tenant, cash-rent and share crop arrangements should not be considered partnerships.

When an individual operator is reported, enter Code "1". When a partnership is reported, enter the number of partners. **Include** the person listed on the face page and all of the other partners. If there are more than 5 total partners, consider this a managed operation and enter a Code "8". When a hired manager is reported, enter Code "8".

Item 8 – Other Operations

This is a screening question to find out if the target name made day-to-day decisions for any other operations in the reference year. Each additional (**non-managed**) operation must be listed or verified on the back side of the Screening Supplement. The information collected on the Screening Supplement will be used to update the List Sampling Frame.

If the operator does not have other operations OR if this is an OpDom 99 record (Item 8 is 'No'):

Enter a "1" in Item Code box 0923, return to the questionnaire and begin the interview.

If the operator has other operations (Item 8 is 'Yes'):

Item 8a – Total Number of Operating Arrangements

Enter the TOTAL number of operating arrangements, **including the sampled operation labeled on the face page** of the questionnaire in Item Code box 0922 on the face page. Entering a "2" indicates the operator makes day-to-day decisions for two operations (the one labeled on the face page of the questionnaire and one additional operation).

Item 8b – Identifying Additional Operating Arrangements

After entering the TOTAL number of operating arrangements in Item 8a, complete the information for the second operation. If the target name had a third operation, complete the information on an additional Screening Supplement for this operation.

If the Regional Field Office already knows about additional operations associated with the target name, there should be additional screening supplements for these operations. Verify that the target name is still involved with each of these operations. Also, there may be partner labels for any or all of these operations. Verify the names and addresses of additional operations and partners associated with them. Mark out any operations the target name was not associated with in the reference year. If any partner names are not listed, add them with complete name and address information.

If the target name is involved (either as individual operator or as a partner) with any other operations which are not listed on a Screening Supplement, record these. In the partner space record the names of all of the partners (up to four) other than the target name associated with each of the additional operations.

Item 8c – Day-to-Day Decisions for Additional Operations

For each of the additional operations, check the appropriate box to explain how the day-to-day decisions were made in the reference year. We are interested in how the operation was managed on a day-to-day basis; not the legal definition of the operation.

4.7 Special Situations – Managed Operations

Treat Managed Operations as you would OpDom 99 operations, the target name is the operation.

If the operating arrangement for the target name on the face page is a managed operation and was still in business in the reference year, under a new hired manager, you will contact the new hired manager and collect data for the operation named on the face page. You will also need to contact the original target name to verify the other operations listed, and if that originally selected target individual has any additional operations you will list them on one or more Screening Supplement(s).

If the managed operation is no longer farming, complete the Screening Supplement and record the new operator and/or operation.

5 Completing the Questionnaire

5.1 Introduction - Layout

This chapter will describe, in detail, the questions in the Cost and Returns (CRR) version. Detailed instructions for questions related to specific commodity versions are located in Chapter 6.

5.2 Section 1 – Acreage in 2017

5.2.1 Section Purpose

Section 1 has the following primary functions:

- 1) Measure the total land operated.
- 2) Determine the tenure arrangements and whether farmers are renting on a share, cash, flexible, or rent-free basis.
- 3) Account for rent paid and value of land rented from others.
- 4) Account for rent received and value of land rented to others.

Acres of owned and rented land are used to determine the total size of the farm under the operating arrangement identified on the label. Total acres are one measure of farm size used in reports and analyses. Knowledge of how much land is owned versus rented is the basis for studying farm tenure arrangements.

5.2.2 Acres Operated

5.2.2.1 General Instructions for Items 1-5

Items 1-4 account for acres owned, acres rented from others, and acres rented to others by this operation at any time during the year. Answers for these items are reported to the nearest whole acre.

For operations that were in business for only a part of the year, collect data for the part of the year when it was still in operation. If the operation went out-of-business before December 31, end-of-year inventory values for crops in storage or livestock should be zero when you ask about these later in the interview. However, you will usually find fairly large amounts of cash or other assets such as land contracts due from sales of farmland.

Exclude data for the part of the year that an operation was not in business including any income from renting the operation to others after this operation went out-of-business.

Sometimes an operator has several operating arrangements, such as an individual operation and a partnership operation, so be sure the questionnaire contains data only for the arrangement identified on the label.

Include:

- 1) All cropland, the farmstead, government program land, idle land, orchards, pasture, wasteland, wetland and woodland, regardless of location, if the operator made the day-to-day decisions for that land under the selected operating arrangement.
- 2) Land in another state that is part of the operation (if the operator made the day-to-day decisions for that land).
- 3) Land worked by sharecroppers. Sharecropper operations are considered part of the landowner's operation. A sharecropper is a worker who furnishes ONLY LABOR (his own and often his family's) for a share of the crop. Sharecroppers generally furnish no machinery, seed, fertilizer, etc.
- 4) All land in the operation that is used by the operator's children for 4 H or FFA projects, if the operation's equipment is used.

Item 1 – Acres Owned

Include:

All land owned by the operation such as cropland, the farmstead, government program land, idle land, orchards, pasture land, wasteland, and woodland. Include land that has the potential for growing crops or grazing livestock even if it was not used for agricultural purposes during the year. Also include land held under title, purchase contract, homestead law, or as part of an estate (if someone associated with the operation is an heir or trustee).

Exclude:

Land separate from the operation (such as land in subdivisions, commercial buildings, timber, etc.) which is permanently out of agricultural use.

Sometimes you will find a situation where the operator (and/or partners) owns the land but has set up the operation so that the land is rented to the operation. This is done for tax and other financial benefits. When this occurs, do not include the acres the operation rents from the operator as owned acres. Treat them as you would acres rented from any other landlord, and be sure the amount of rent paid is recorded.

If the operator (as a landlord to the operation) paid some of the expenses, you should also handle them the same as for any other landlord. You will usually have to probe very carefully in these situations.

Item 2 (a - c) – Acres Rented from Others

There are three categories of rented acres:

- 1) Cash rented acres with the payment being a fixed or flexible amount are recorded in Item 2a,
- 2) Share rented acres are recorded in Item 2b, and
- 3) Acres used rent-free are recorded in Item 2c.

Include:

All land rented from private individuals, partnerships, corporations, Federal, State or local governments, Indian reservations, railroads, etc. if the operation:

- 1) Paid fixed cash rent. (Item 2a)
- 2) Paid for use of land with a flexible lease agreement, including hybrid rental arrangements. (Item 2b)
- 3) Paid for use of the land with a share of the crops (either standing or harvested) or livestock production. (Item 2b)
- 4) Had free use of the land, including "handshake" agreements for other services like maintenance of the landlord's property, lawn mowing, etc. (Item 2c)
- 5) Was privately owned by the operator, but rented to the operation for tax purposes either for free or for rent. This land will not be considered an asset to the farming operation.

Exclude:

- 1) Grazing land rented on a fee-per-head or Animal Unit Month (AUM) basis, including public lands the operation has grazing rights, sole use, or year-round use of.
- 2) Land on which the operator's livestock were fed under a contract (for example, commercial feedlots).
- 3) Shared livestock production that does not involve land rental.
- 4) Short-term land rental agreements where the operator will graze livestock for a period of 2-6 months, after which the landlord will harvest crops later in the year or has already harvested a crop. In this case, the landlord "operates" the land.

If the operation is a corporation that rents land from the operator (who is a private individual landowner), record the land as rented from others.

Be sure you obtain the full number of rented acres from the respondent. Operators often do not consider the land they rent as including woods or wasteland; they only include the usable land. Even though the operator may not consider it that way, the landlord considers the whole parcel rented. If the operator was responsible for looking out for the owner's interest in the woodland and/or wasteland, or had the right to cut firewood, hunt, etc. on the acres, then these acres should be included as acres rented from others.

Many land rental arrangements feature flexible cash rents, in which the actual rent paid may vary with prices, yields, or gross revenues. **Include** flexible cash leases in Item 2a.

Item 3 – Acres Rented To Others

Include:

- 1) Land this operation owned which was rented to another operation for cash. This land should also be included in Item 1.
- 2) Land this operation rented or leased from someone else but which it subleased to another operation. This land must also be included in one of the categories in Item 2.

- 3) Land rented to others for which this operation received a specified amount of the crop or livestock produced, a share of the crop or livestock produced, or other non-cash compensation.
- 4) Land this operation let someone else use without ever intending to receive payment (rent-free).
- 5) Pasture or grazing land rented out on a per acre basis for the whole productive season. **Exclude** land rented out on short-term land rental agreements where the rentee will graze livestock for a period of 2-6 months after which the operator will harvest crops later in the year or has already harvested a crop.
- 6) Privately owned land administered by a Public, Industrial, or Grazing Association (PIGA) agency as part of a range grazing unit on a fee-per-head or AUM basis through exchange-of-use. This land should also be included in Item 1.
- 7) Land owned but managed for a fee or salary by someone else.
- 8) Land used for such purposes as cell phone towers, pipelines, roadways, windmills, oil wells, etc., in which the operation receives a payment. The income received from these items is included in Section 27, Item 5h or 5j

Exclude:

- 1) Land enrolled in Government programs for which this operation has enrolled and makes day to day decisions (such as acres under Direct and Counter-cyclical Payment Program (DCP), acres in the Conservation Reserve Program, etc.).
- 2) Land worked by sharecroppers on this operating unit.
- 3) Land used by a child for 4-H or FFA projects if the operation's equipment was used.
- 4) Land on which crops were grown under contract by this operation.
- 5) Land on which the operator fed livestock under contract for someone else.
- 6) Land used for pasturing someone else's livestock when payment was made on a per head, fee, or AUM basis.
- 7) Land rented out on short-term (grazing) rental agreements where the "renter" (livestock owner) will graze livestock for a period of 2-6 months after which the operator will harvest crops later in the year or has already harvested a crop. The livestock owner in this case is not making decisions about the management of the land therefore the land is not rented out. This differs from Ag Census.

Item 4 – Total Acres Operated in this Operation

The entry here will be the sum of all land owned, Item 1 (Box A), **plus** land rented or leased FROM OTHERS, Item 2 (Box B), **minus** the land rented or leased TO OTHERS, Item 3 (Box C). The result will equal the total acres in this operation for 2017 (Box D). It is very important to establish the correct acres for this operation in Item 4 (Box D) since the rest of the report form

questions apply to this acreage entry. Be sure this total includes all cropland, the farmstead, government program land, idle land, orchards, pasture, wasteland, wetlands and woodland associated with this operation.

For future sections of this questionnaire, data will be collected for the operation as defined by the acres in Item 4.

Item 5– AUM Land

Grazing land rented on a fee per head or animal unit month (AUM) basis, including public lands the operation has grazing rights, sole use, or year round- use of are not considered part of the operation. These acres should not be included in the total acres operated, Item 4 (Box D).

5.2.3 County Breakout

Item 6 – Principal County

The principal county is the county where the largest value of the agricultural products sold was raised or produced. Data will be tabulated and published in this county. Please print the principal county, the two letter state abbreviation, and the number of acres from this operation that were located in that county. All acres in the principal county should be reported here, not just land which is cropland harvested.

Item 6a – Agricultural Activity in any OTHER County

If the acres in this operation (Section 1, Item 4) are located in more than one county, print the names of the additional county (ies), the state(s), and the number of acres in each additional county in these response cells. Up to three additional counties may be reported. The number of acres in Items 6 and 6a should equal the number of acres in Item 4. If the acres in this operation are in more than four counties, report the four counties that have the largest value of production.

5.3 Section 2 – Land Use in 2017

In Section 2, report how the land in Section 1, Item 4, this operation, was used during 2017. Reminder: the land rented **to others**, as reported in Section 1, Item 3 is **not** part of this operation and will not be reported in this section.

5.3.1 Special Situations

Land used for multiple purposes - In general, the land use items have been arranged in what is normally considered a decreasing order of importance. In this section, each acre in this operation should be reported only once, even though the land may have been used for more than one purpose. See explanations below. Total acres reported in Section 2, Item 5 (Box E), should equal the total acres reported in Section 1, Item 4 (Box D).

Double-cropping - If more than one crop was harvested from the same land in 2017, report the acreage only once in Item 1a as "Cropland harvested." For example, if wheat was harvested from a 40-acre field in 2017, and then soybeans were planted and harvested from the same field in 2017, report only 40 acres of cropland harvested in Item 1a. However, when reporting

acres of the individual crops harvested in Section 7 "Field Crops", the 40 acres of wheat and the 40 acres of soybeans should both be reported on separate lines.

Interplanted crops - If a crop was interplanted in an orchard and harvested, report the acres once in Section 2, Item 1a, "Cropland harvested. Record each crop in the appropriate crop section. For example, if a vegetable crop was interplanted among trees in a 5-acre orchard, report the portion of the 5 acres devoted to vegetables in Section 9 "Vegetables, Potatoes, and Melons" and report the 5 acres for the orchard in Section 10 "Fruit, Nuts, and Berries".

Crops grown in alternating strips - If two crops were grown at the same time in alternating strips in the same field, report them once in Section 2, Item 1a, "Cropland harvested." Acreage devoted to each crop will be recorded in the appropriate crop sections in the report form. If a 50-acre field was planted in corn and soybeans, with 16 rows of corn followed by 16 rows of soybeans, 25 acres should be reported for corn and 25 acres should be reported for soybeans in the area where these crops are listed in Section 7 "Field Crops".

Crops grown in alternating strips with idle land or summer fallow – For example, a field had a crop grown in alternating strips with unharvested grass planted to control erosion. Report the acreage devoted to the crop in acres in Item 1a, "Cropland Harvested" and the appropriate crop section. Report the acreage devoted to the unharvested grass in Section 2, Item 1d "Cropland idle or used for cover crops."

Skip row planting with idle land or summer fallow - "Skip" row planting involves leaving a space between the rows for conserving moisture, soil conservation, tillage practices, movement of machinery and equipment between the rows for spraying and harvesting of the crop, etc. See the examples below.

Example 1. If a crop was planted in "skip" rows with a cover crop for soil improvement, report the harvested portion of the field in this section, Item 1a, "Cropland harvested" as well as in the appropriate crop's section. Include the acres in soil improvement in this section, Item 1d, "Cropland idle."

Example 2. If "skip" rows were in cultivated summer fallow, report the harvested portion of the acres in Item 1a, "Cropland harvested" as well as the appropriate crop's section. Record the acres in cultivated summer fallow in Item 1c, "Cropland in cultivated summer fallow."

5.3.2 Cropland

Item 1a - Cropland harvested

Includes all acreage from which crops were harvested in 2017 and land in fruit and nut trees and vines, bearing age acres and nonbearing age acres in an orchard, land in berry production, grove, or vineyard being maintained for production. The acreage of cropland harvested will include:

- Field crops (corn, wheat, barley, oats, sorghum, soybeans, cotton, tobacco, etc.)
- Hay and forage crops (dry hay, haylage, silage, greenchop, etc.)
- Christmas trees (whether harvested or not in 2017), short rotation woody crops, fruit trees, nut trees, and grapevines (include bearing age acres and nonbearing age acres of trees and vines whether harvested or not in 2017)

- Nursery, greenhouse, floriculture, sod, mushrooms, vegetable seeds, and propagative material.
- Vegetables, potatoes, and melons
- Any other acreage from which a crop was harvested even if the crop was considered a partial failure and the yield was very low.
- The sum of acres reported harvested in Sections 5-10, plus the total square feet under glass in Section 8, minus the acreage of land from which two or more crops were harvested (acres double-cropped), equals "Cropland harvested," Section 2, Item 1a.

Item 1b - Cropland on which all crops failed or were abandoned

Include:

- All land on which a crop failed (except fruit or nuts in an orchard, grove, or vineyard or berries being maintained for production) and no other crop was harvested and which was not pastured or grazed.
- Acreage not harvested because of low prices or labor shortages (except fruit or nuts in an orchard, grove, or vineyard being maintained for production).
- If some, but not all, of the crop acreage was harvested, the harvested acreage should be reported in Item 1a, and in the appropriate crop section. The remainder of the acreage should be reported in this item provided it was not used for pasture or grazing.

Item 1c - Cropland in cultivated summer fallow

Includes cropland in cultivated summer fallow or chemical fallow. The land may have been only treated with herbicides, only tilled, or a combination of these practices to control weeds and conserve moisture and not seeded for harvest in 2017. Include cropland summer fallowed in 2017 and planted to a crop (i.e. winter wheat, etc.) for harvest in 2018.

Item 1d - Cropland idle or used for cover crops or soil improvement but not harvested and not pastured or grazed

Cropland idle includes any other acreage which could have been used for crops without any additional improvement and which was not reported elsewhere in Item 1.

Include:

- Land used for cover crops or soil improvement but not harvested, grazed, or cultivated.
- Land in Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), Conservation Reserve Enhancement Program (CREP), or other Federal or State conservation programs that was not hayed or grazed in 2017.
- Land occupied with growing crops for harvest in 2018 or later years but not harvested or summer fallowed in 2017 (except fruit or nuts in an orchard, grove, or vineyard or berries being maintained for production). Examples are acreage planted in winter wheat, strawberries, etc., for harvest in 2018 and no crop was harvested from these acres in 2017.
- Land in "skipped" rows between rows of crops or field strips should be reported here if the land was not used for any other purpose. It should not be reported in Item 1a, "Cropland harvested."

Exclude acreage from which crops were harvested or planted and intended to be harvested or used for pasture or grazing.

5.3.3 Pasture, Woodland, All Other Land, and Total Acres

Item 2a - Permanent pasture and rangeland

This land use item includes pastureland and rangeland, other than woodland pasture or cropland, normally used for pasture or grazing. It usually includes land referred to as meadow, prairie, or range and consists of various types of grasses, such as bunch grass, shortgrass, buffalo grass, bluestem, bluegrass, switch grass, etc. It also includes land predominantly covered with brush or browse. Pastureland or rangeland containing desert shrubs, sagebrush, mesquite, greasewood, mountain browse, salt brush, cactus, juniper, pinion, etc., are to be reported here. Also, include grazing lands that were improved by seeding, liming, fertilizing, irrigating, drainage, or controlling brush or weeds.

Item 2b - Woodland pastured

Report all woodland or timber tracts, natural or planted, used for pasture or grazing.

Exclude:

- Land planted for Christmas tree production. This should be reported in Item 1a.
- Cut over or deforested (clear cut) land improved for pasture. This should be reported in Item 2a.
- Pastureland or rangeland containing desert shrubs, sagebrush, or mesquite land. This land should be reported in Item 2a.

Item 3 - Woodland not pastured

Include:

- Cut over and deforested land with new or remaining growth that has future value as wood products and was not pastured in 2017.
- All other woodland, including tapped maple trees (sugar bush).

Item 4 - All other land

Include all other land occupied by building sites, farmsteads, windbreaks, lanes, roads, ponds, owned or leased water used for aquaculture production, barn lots, gardens for home use, wasteland, etc. Also, include all land in this operation that does not fit the definition of the other land use categories listed in Items 1, 2, and 3 above.

Item 5 (Box E) - Total Acres

This is the total of all entries reported for Items 1 through 4.

Item 6 – Check Box E = Box D

The total acres reported in Item 5 should be the same as the acreage reported in Section 1, Item 4 (Box D). If not, go back and make the necessary corrections.

5.4 Section 3 – Land Rented From Others

Item 1 – Land Rented or Leased for Cash or Per Head/AUM Basis

Answer yes if the operation rented or leased any land from others for cash or on an AUM basis in 2017. Also answer yes if cash rent was paid in 2017 for previous years or if rent was paid in 2017 in advance (see Item 5).

Items 2-4 – Cropland and Pastureland Rented for Cash

Report the number of acres for each type of land (Item 2 non-irrigated cropland, Item 3 irrigated cropland, and Item 4 permanent pasture, grazing or grassland), that were rented on a per acre basis for **cash** in 2017. Acres reported in these items should be included in Section 1, Item 2.

Exclude:

- Acres rented/leased for a share of the crop or livestock.
- Acres rented/leased on a fee per head, per pound of gain, or AUM basis.
- Acres rented/leased that includes dwelling and buildings along with farmland.
- Acres rented/leased free of charge.

Item 5 – Cash Rent Paid for Acres Rented From Others

Include rent for land and/or buildings. Record the total amount paid during the year to all landlords for cash rented acreage. When an operator rents buildings, they are renting the land under the buildings as well. The land cannot be used by the landlord if the building is rented. If the operator rents the buildings only, record the number of acres the building site covers in Section 1, Item 2a.

Ask this question even if no land was rented during the reference year. The operation may have paid rent for land operated in a prior year or pre-paid rent for the upcoming year. If this question is skipped just because the operation did not rent any land in the reference year, we might miss previous year's rent paid or rent paid in advance. If an operation had more than one cash rental arrangement, the sum of **all** the individual rents should be recorded.

For crops such as sugarbeets, co-op shares may be rented with or without associated land. The rent, if any, associated with the rental of the land, should be included in this item.

Exclude:

- Any government payments landlords received from these acres.
- Any short-term livestock grazing arrangements where the livestock owner grazes livestock for a few months, but the owner will harvest crops later in the year. The payments for this short term grazing arrangement should be recorded in Item 6b.

Buildings for Non-Agricultural Purposes:

If the operation rented a building for a non-agricultural use (for example, a packing shed), determine whether or not the operator keeps income & expenses of the packing shed separate from the agricultural enterprise.

If the financial records are kept separately, do not count the packing shed rental as part of the farm. Record it as part of the profit or loss of a separate business in Section 37, Item 1c. Also, record any other income and expenditures of the packing shed in Section 37 and NOT in other sections of the ARMS questionnaire.

If the financial records are kept together, count the packing shed rental as part of farm rent in this item. Also, record any income or other expenditures of the packing shed in the appropriate items in other sections of the ARMS questionnaire.

Item 6a – Usage Fees Paid for Use of Public Land

(Mostly found in AZ, CA, CO, ID, MT, NE, NV, NM, ND, OK, OR, SD, TX, UT, WA, and WY)

The operations that use public, industrial or grazing association land will likely have rental payments on an AUM basis. This is usually controlled by the Bureau of Land Management (BLM), the Forest Service (FS), Bureau of Indian Affairs (BIA), or by grazing associations, energy companies, timber companies or railroads.

Include expenses for use of **public** land, industrial land or grazing association land associated with a range grazing area (allotment or unit). **Include** all expenses for any year, as long as they were paid in the reference year.

Exclude expenses for use of land controlled by private individuals or partnerships even if the operator reports livestock were pastured on an AUM basis on this land.

If the operation owned (or rented from others) land which was administered on an exchange-of-use basis, these acres should be reported as owned in Section 1 Item 1, or rented from others Section 1 Item 2 and as acres rented to others in Section 1 Item 3. Record the gross fees paid in Section 28 Item 2. The value of the cash rent received for the land administered on an exchange for use basis is recorded in Section 27, Item 5b.

Item 6b – Amount Paid for Pasturing Livestock on Private Land

Record the total amount paid in the reference year for pasturing or grazing livestock on **privately** owned land on a fee per-head (AUM), gain, or other basis. **Exclude** contract arrangements.

Include expenses for a 2-4 month rental where the operator will graze livestock and the landlord will harvest crops from the same land later in the year or has already harvested a crop.

Exclude expenses for pasturing or grazing livestock on public land. These expenses should be recorded in Item 6a.

5.5 Section 4 – Land Use Practices

Item 1a – Acres Drained by Tile

Tile drainage is a type of drainage system that removes excess water from soil below the surface.

Item 1b – Acres Drained by Ditches

Ditch drainage systems are designed to provide primarily surface drainage.

Item 1c – Acres Under a Conservation Easement

A conservation easement (also called conservation covenant, or conservation restriction) is a power invested in a qualified private land conservation organization (often called a "land trust") or government (municipal, county, state or federal) to constrain, as to a specified land area, the exercise of rights otherwise held by a landowner as to achieve certain conservation purposes. Some examples of conservation goals include maintaining and improving water quality, perpetuating the growth of forests, maintaining wildlife habitat and migration corridors, and protecting scenic vistas visible from roads and other public areas.

Item 2a – No-till Practices

No-till farming practices is cropland used for production from year to year without disturbing the soil through tillage other than planting. No-till is an agricultural technique which increases the amount of water that infiltrates into the soil and increases organic matter retention. In many agricultural regions it can reduce or eliminate soil erosion.

Item 2b – Reduced Tillage

Reduced tillage leaves between 15% and 30% residue cover on the soil of small grain residue to conserve moisture and prevent erosion. This may involve the use of a chisel plow, field cultivators, or other implements.

Item 2c – Intensive Tillage

Intensive tillage leaves less than 15% of crop residue of small grain residue. This type of tillage is often referred to as conventional tillage. Intensive tillage often involves multiple operations with implements such as a mold board, disk, and/or chisel plow.

Item 2d – Cover Crops

A cover crop is a crop planted primarily to manage soil erosion, soil fertility, soil quality, water, weeds, pests, and diseases on non-CRP acres.

Item 3a – Harvested Cropland Irrigated

Report the number of harvested acres which were irrigated one or more times in 2017. These acres should be included in Section 2, item 1a.

Item 3b – Pastureland, Rangeland, Abandoned Land, and Other Land Irrigated

Report the number of acres of pastureland, rangeland, abandoned cropland and other land which was irrigated one or more times in 2017.

Item 4 – Acres Irrigated at least Once in the last five years

Report the number of acres of all classes of land which were irrigated one or more times in the past five years. If the same land was irrigated more than once in the past five years, record those acres only once.

5.6 Sections 5 to 10 – Crops

5.6.1 Section 5 – Hay and Forage Crops

Complete this section if any hay or forage crops were cut or harvested from this operation in 2017 **or** if this operation received any income from these crops in 2017.

Include hay, haylage, grass silage, baleage, or greenchop cut from cropland pastures or CRP land. Any pasture or CRP land that had hay cut from it in 2017 should be reported as “Cropland harvested” in Section 2, Item 1a.

If two or more cuttings of the same crop were made from the same field, i.e., all cuttings harvested as dry hay or as haylage, then report the acreage only once for acres harvested and any irrigated harvested acres. Report the total tonnage from all cuttings combined in the “Total Tons Harvested” column. Dry hay is reported as “Tons, dry” and haylage, grass silage, and greenchop are reported as “Tons, green.”

If haylage, grass silage, or greenchop was cut from the same land from which dry hay was cut, report the acreage and production for that land which was cut for dry hay under the appropriate dry hay category and the acreage and production under the appropriate haylage, silage, or greenchop category. For example, if 20 acres of alfalfa were cut for hay and then the same land was used to produce alfalfa haylage, report 20 acres and the tons harvested of hay in Item 4 “Alfalfa and alfalfa mixtures for dry hay,” and 20 acres and the green tons harvested of haylage in Item 5 “Haylage or greenchop from alfalfa or alfalfa mixtures.”

Report quantity harvested in tons. Example: If 400 square bales of hay were produced, estimate the average weight of the bales and convert total quantity harvested to tons (the requested unit of measure).

(70 pounds * 400 bales) divided by 2,000 pounds = 14 tons

Exclude the acreage and production when straw was produced, but if the straw is sold, report the value of the straw sales under the appropriate grain from which it was produced in Section 7 Field Crops.

Item 2 - All land from which dry hay, haylage, grass silage, or greenchop was cut or forage was harvested

Report the total acres from which hay and forage crops were harvested and any irrigated harvested acres from this operation. If different harvesting methods were used on the same acreage or when multiple cuttings of the same harvesting method were used, report the acreage only ONCE. Only acres harvested and irrigated acres harvested are needed here. Report the tons harvested in Items 4-7. **Exclude** corn silage, sorghum silage, and straw.

Item 3 – Hay and forage crops sold

After subtracting marketing expenses, record the amount received in 2017 from cash sales for hay and forage crops. **Exclude** contract sales or removals and landlord's share of sales. **Exclude** hay and forage that was fed on this operation. Do not report straw sales here. Report the straw sales in the appropriate type of grain from which it was made in Section 7 Field Crops,

Item 3. For example, if wheat straw was sold, include the sales with the wheat for grain value of sales.

Item 4 - Alfalfa and alfalfa mixtures for dry hay

Report only the acres and dry tons of alfalfa harvested or cut for hay and any irrigated harvested acres. Report the dry weight in tons at the time the hay was removed from the field for storage or feeding. Also include the amount of production that has been (or will be) used on this operation.

Item 5 - Haylage or greenchop from alfalfa or alfalfa mixtures

Report acres harvested, tons harvested green, and any irrigated harvested acres of haylage or greenchop (hay cut and fed green) of alfalfa and alfalfa mixtures. If haylage or greenchop from alfalfa or alfalfa mixtures was cut from the same land from which dry alfalfa hay was cut, also report the acreage and production for the acres which were cut for alfalfa dry hay in Item 4. Also include the amount of production that has been (or will be) used on this operation.

Item 6 - Other dry hay

Report the acres, irrigated harvested acres, and tons harvested, from small grains or small grain mixtures. Include hay made from small grains and alfalfa mixtures where the quantity harvested was predominantly from small grains. Report all dry hay made from such crops or mixtures as clover, lespedeza, fescue, timothy, Bermuda grass, Sudan grass, sorghum cut for dry hay, sorghum-sudan crosses, orchard grass, soybeans, peanuts, etc. Also include the amount of production that has been (or will be) used on this operation.

Item 7 - All other haylage, grass silage, and greenchop

Report the acres, irrigated harvested acres and tons harvested green, of haylage, grass silage, and greenchop (hay cut and fed green) made from such crops or mixtures as small grains, clover, lespedeza, fescue, timothy, Bermuda grass, sudangrass, sorghum-sudan crosses, orchardgrass, soybeans, peanuts, etc. When reporting haylage, grass silage, and greenchop, include acres and total quantities from all cuttings, whether harvested from land previously cut for dry hay or from land used mainly for pasture. Also include the amount of production that has been (or will be) used on this operation. Report alfalfa haylage in Item 5 in this section.

5.6.2 Section 6 – Cultivated Christmas Trees/Woody Crops/Maple Syrup

Complete this section if any woodland crops were grown, harvested, or tapped on this operation in 2017 **or** if this operation received any income from these crops in 2017.

Item 2 - Cultivated Christmas trees - cut and to be cut

Report the total acres of Christmas trees grown for cut Christmas trees as “Acres in Production” whether harvested in 2017 or for future harvest. “Number of Trees Cut” should be only those trees harvested in 2017. If there were acres in production, but no trees cut in 2017, report the “Acres in Production” and enter “0” for “Number of Trees Cut.” Also, “Acres in Production” should be included in Section 2, Item 1a, “Cropland harvested.”

Report acres of Christmas trees harvested as live nursery stock (balled and burlapped) in Section 8, Item 4 using code 0488, "Nursery stock."

After subtracting marketing expenses, record the amount received in 2017 from cash sales for cut Christmas trees. **Exclude** contract sales or removals and landlord's share of sales.

Item 3 - Short rotation woody crops

Report the total acres of short rotation woody crops as "Acres in Production" whether harvested in 2017 or for future harvest. Also, "Acres in Production" should be included in Section 2, Item 1a, "Cropland harvested."

A short rotation woody crop is a tree that grows from seed to a mature tree in 10 years or less. These are trees for use as paper or pulp, or as engineered wood or for ethanol. The wood is too soft to be used directly for lumber. Exclude nursery stock or trees that will be harvested for lumber, fence posts, telephone poles, etc.

After subtracting marketing expenses, record the amount received in 2017 from cash sales for short rotation woody crops. **Exclude** contract sales or removals and landlord's share of sales. Report timber and pulp wood sales in Section 27, Item 5d.

Acres Irrigated

In Section 6, Items 2 and 3, report the total acres in production that were irrigated at least once in 2017

Item 4 - Maple syrup

Report the total number of taps in 2017 and the gallons of syrup produced from the sap harvested from these taps. If sap was sold, estimate the number of gallons of syrup it would have produced. Also, report the acres of tapped maple trees in Section 2, Item 3 (Woodland Not Pastured). Do not include syrup produced from sap purchased from others.

After subtracting marketing expenses, record the amount received in 2017 from cash sales for maple syrup and maple sap sold from this operation in 2017. **Exclude** contract sales or removals and landlord's share of sales. **Exclude** from the value of sales any syrup produced from sap purchased from others.

5.6.2 Section 7 – Field Crops

Complete this section if any field crops were grown or harvested on this operation in 2017 **or** if this operation received any income from these crops in 2017.

This section collects information on harvested tobacco, small grains, field seeds, and row crops. Report acres from which field crops were harvested in Item 2. Acres which more than one crop were harvested are reported separately in Item 3 but only counted once in Item 2. Report quantity harvested in the requested unit of measure.

5.6.3.1 Completing the Table

To report a field crop harvested in 2017, locate the field crop name in the list below the table. Use the information provided (name, unit of measure, and code) to fill the blank write-in spaces in the table. Be sure to enter the correct crop code in the second column.

Report any other field crop harvested in 2017 but not listed anywhere on the report form in this section. Print the crop name in the first column and crop code "0752" in the second column.

Column 3 – Acres Harvested

Except for tobacco, report harvested acreage to the nearest whole acre. Make sure the respondent is not reporting planted acres by crop when you are only asking for harvested acres.

Include acreage for which two uses were made of the same crop. An example is alfalfa acreage harvested for both hay and seed. These acres are recorded twice: as acres of alfalfa in Section 5, and as acres of alfalfa seed harvested in Section 7, Crop Code 542 to account for the seed.

Exclude acreage for second or later harvests (for the same use) of any crop from a single planting, such as second or third pickings of cotton and ratoon crops of rice. **Exclude** acres of 2016 crops not harvested until 2017 due to weather conditions.

Partial acreage harvested in a field

If only some of the acres within the field were harvested, report only the acres actually harvested and not the total acres in the field. As an example, if 3 acres of corn drowned out in a 20-acre field of corn and 17 acres of corn were harvested for grain, report the 17 acres harvested in this section. The remaining 3 acres, if not summer fallowed, hayed, or grazed, should be included in Section 2, Item 1b, "Cropland on which all crops failed or were abandoned."

Acres not yet harvested

If a planted crop would normally be harvested before December 31, 2017 (corn, soybeans, etc.) but harvest was/will be delayed until 2018 because of weather conditions, equipment problems, etc., it should be included in "Acres Harvested," the estimated production included in "Total Quantity Harvested," and the portion of the acres harvested that were irrigated, if any, included in "Acres Irrigated."

Column 4 - Total Production Harvested

Report the total quantity harvested in the unit of measure specified for each crop. If the unit of measure is different in the respondent's records than the unit of measure requested on the report form, convert the total quantity harvested to the requested unit of measure. Enter quantity harvested data on the same line as the crop's acreage harvested. Note that Sections 5 and 7 are the only sections that request the total quantity harvested for crops. Report cut Christmas trees in Section 6. Report maple syrup produced in Section 6.

Example: If 240 tons of sunflower seed were harvested, convert to pounds harvested. (240 tons multiplied by 2,000 pounds = 480,000 pounds.)

Column 5 - Acres irrigated that were harvested

Acres irrigated are acres on which water was applied by any artificial or controlled means, such as sprinklers, furrows and ditches, spreader dikes, flooding, or sub-irrigation pipes. Include the harvested field crop acres where lagoon waste water from livestock operations was distributed by a sprinkler or flood system.

Column 6 – Amount of Production Used on This Operation

Record the amount of the share of production belonging to the operation that has been (or will be) used on this operation for feed, seed, etc.

Include:

- The landlord share that was used on the operation. In this case, do not record the production used in the landlord's share of the crop in Section 28 (Landlord's Share of Crops & Livestock).

Exclude:

- Any production that was (or will be) used for human consumption.
- The landlord's share of production if it was used outside the operation.
- Any crop production that was fed to non-owned livestock as part of a production contract with the livestock owner. This production should be recorded as a cash sale to the livestock owner and the same value for the crop sold should be recorded as a contractor expense in Section 29, Item 6.

Example:

125 irrigated acres of oats were harvested for grain with an average yield of 60 bushels per acre. These oats were harvested off share rented acres where the landlord received a 50% share. The operation used its entire share of the oats on the operation in 2017. This information would be recorded as follows:

Column 3	–	125	acres harvested
Column 4	–	7,500	total production [125 acres x 60 bu/acre = 7,500 bushels]
Column 5	–	125	irrigated acres that were harvested
Column 6	–	3,750	operation's share used on this operation [7,500 total bushels produced x 50% share x 100% used = 3,750 bushels]
Section 28, Item 2	–	13,650	market value of landlord's share of production [7,500 total bushels produced x 50% landlord share x \$3.64 per bushel = \$13,650]

Column 7 – Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales for field crops. Marketing expenses include check-off, drying, commission, ginning, inspection, storage, and transportation, etc.

Include:

- Crop sales received in 2017 from crop harvested in 2016 and earlier years. In this case, columns 3 through 6 should be blank if no acres were harvested in 2017.
- Community Supported Agriculture (CSA) sales are considered a cash sale and not a contract.
- The value of straw produced on this operation **and sold**. Report the straw sales in the appropriate type of grain from which it was made in Item 3. For example, if wheat straw was sold, include the sales with the wheat for grain value of sales.

Exclude:

- Marketing Contract sales recorded in Section 20, Item 2.
- Production Contract movements recorded in Section 21, Item 2.
- Landlord share of production, which is recorded in Section 28, Item 2.
- Sales from other farm related activities, such as trading and speculation or livestock dealer activities which are recorded in Section 27.
- Value of sales from land rented to others or worked on shares by others.
- Amount received in 2017 for crops sold in 2016 and earlier years. This is recorded in Section 22, Items 1a and 1a(i) (Accounts Receivable).

5.6.3.2 Crop-Specific Instructions

Corn

Report the acres of corn harvested for grain, seed, silage, or greenchop.

Report:

- Sweet corn for seed, code 740, in Section 7.
- Popcorn, code 662, in Section 7.
- Sweet corn harvested for fresh market or processing, code 0461, in Section 9.
- Blue corn, code 067, Corn for grain or seed, in Section 7.
- Purple corn, white corn, etc. code 067, Corn for grain or seed in Section 7.

Wheat, oats, barley, and rye

Report acres of wheat, oats, barley, and rye harvested for grain or seed from this operation in 2017 in Section 7. Report acres of wheat harvested for grain or seed by class (Winter, Durum, Other Spring), as requested on the report form. Winter wheat, winter barley, and oat acres harvested and quantity harvested should be reported for the crop **harvested in 2017** (not the acres planted in the fall of 2016). White wheat may be winter or spring wheat. Do not report white wheat in code 752. Mixed grains should be reported under code 752, "Other field crop" (report the quantity harvested in pounds). Report any small grains harvested for hay, haylage, baleage, silage, or greenchop in 2017 in Section 5.

Do not report the acres or quantity produced of straw baled from small grain crops that were previously harvested for grain or seed. Report straw sales in the appropriate type of grain from

which it was made. For example, if spring wheat straw was sold, include the sales using code 728.

Cotton

Report acres of cotton harvested as either Pima, code 644 or Upland, code 581. Report the quantity harvested in bales. If cotton was grown in a skip-row pattern, report only the acres of cotton harvested and not the land occupied by the skip rows.

Report total value of sales of cotton and cottonseed sold or moved from this operation during 2017. Include the value of any cotton or cottonseed given to landlord(s) as rent. Include payments received in 2017 from cooperatives or marketing organizations for crops produced on this operation regardless of the year in which the crops were harvested.

Dry edible beans, dry edible peas, and lentils

Report the information requested for acres harvested on this operation as follows:

Crop	Code
Chickpeas/Garbanzo	2816
Dry edible beans (excluding chickpeas and lima)	554
Lentils	635
Lima beans, dry	557
Dry Southern/cowpeas	584
All other dry edible peas	659

Herbs Dried

Include Clary sage in item 620. Report Clary sage as pounds of sclareol (oil) extracted. The producer is paid for the sclareol (oil) that is extracted and not the weight of the dry matter harvested. This is similar to mint in which production is reported in pounds of oil.

Peanuts

Report all types of peanuts for nuts harvested on this operation. Peanuts cut for hay should be reported in Section 5 as "Other dry hay" or "All other haylage."

Potatoes and sweet potatoes

Report the acreage and the total quantity of potatoes and sweet potatoes harvested from this operation in Section 9. Exclude home use.

Sorghum

Include:

- Sorghum or milo harvested for grain or seed, silage, or greenchop
- Sorghum or milo harvested by cutting the heads from stalks and used for feed un-threshed as sorghum for grain
- Acres from which sorghum or milo was harvested for grain, seed, or silage then grazed after harvest

- Sorghum for syrup, code 704

Soybeans

Report soybeans harvested for beans. Report soybeans cut for dry hay in Section 5 as "Other dry hay" and soybeans cut for greenchop, haylage, or silage as "All other haylage, grass silage, and greenchop."

Sugarbeets

Report separately the acreage of sugarbeets for sugar, code 719, and the acreage of sugarbeets for seed production, code 716.

Sugarcane

Report the acreage of sugarcane for sugar, code 722, and the acreage of sugarcane for seed, code 725, separately. If some acreage in a field was harvested as sugarcane for sugar and some acreage was harvested as sugarcane for seed, prorate the acreage on the basis of each use. ***In Florida and Texas***, report cuttings of sugarcane from September 2017 through April 2018 harvest season. Estimate if necessary. Other states report 2017 crop year.

Tea

Report "mint for tea leaves" in code 767. Report other types of tea in code 752.

Tobacco

Report all types of tobacco harvested from this operation in 2017. In reporting the total acreage, include tenths of acres. If skip rows or sled rows were used, only record the acreage occupied by the harvested tobacco.

Report the total value of sales of tobacco sold or moved from this operation during 2017 regardless of the year the tobacco was grown. Include payments received in 2017 from cooperatives or marketing organizations for crops produced on this operation regardless of the year in which the crops were harvested.

Report tobacco transplants that were **grown and sold** from this operation in Section 8, Item 4, code 1004.

5.6.4 Section 8 - Nursery, Greenhouse, Floriculture, Sod, Mushrooms, Etc.

Review the crop types listed at the bottom of the page before completing this section. Report all of the area for these crops grown for sale or future sale on this operation under glass or other protection, including tunnel production, or in the open, whether wholesale or retail. Include those sold on consignment. Exclude greenhouse vegetables grown for home consumption. Report food crops temporarily covered for early germination, frost protection, etc. in Section 9.

Complete this section if any of the listed crops were grown for sale on this operation in 2017 **or** if this operation received any income from these crops in 2017.

Item 2 – Area Under Glass or Other Protection

Report the total area on which nursery, greenhouse, floriculture, sod, mushrooms, vegetable seeds, and propagative materials were grown as square feet under glass or other protection. Report the area of these crops that were irrigated in 2017 as square feet. Report the total area only once in Item 2 regardless of how many crops were grown for sale from the same area. If more than one type of crop was grown for sale from the same area, report each crop separately in Item 4.

Item 3 – Acres in the Open

Report the total area on which nursery, greenhouse, floriculture, sod, mushrooms, vegetable seeds, and propagative materials were grown in the open as acres to the nearest tenth acre. Report the area of these crops that were irrigated in 2017 as acres to the nearest tenth acre. Report the total area only once in Item 3 regardless of how many crops were grown for sale from the same area. If more than one type of crop was grown for sale from the same area, report each crop separately in Item 4.

Item 4 – Crop Table

Print the crop type name, corresponding crop code from the list below the table, the area grown for sale, and cash sales for this crop type. Do not duplicate the area grown for sale for each crop type in the “Square Feet Under Glass or Other Protection” in Item 2 and “Acres in the Open” in Item 3.

Area under protection refers to plants grown under a structure (such as glass, fiberglass, plastic, or saran) for the **entire** growing season. Crops covered only temporarily to be further grown in the open should not be included for area under protection.

- If the same crop was grown for sale more than once, such as mushrooms, report the square footage only once. In the case where different crops were grown on the same benches or beds, report the area for each crop grown for sale.
- For crops grown in hot beds, benches, or cold frames, report only the square feet of the beds, benches, or frames and not the walkways or storage areas. An example might be where crops are grown in stacked trays 3 tiers high. In this case, calculate the square footage of one tier and multiply the footage by 3. (If a tier equals 160 square feet, multiplied times 3 levels equals a total 480 square feet).
- For sod, report area grown for sale only as “Acres in the Open.”
- If more than one type of crop was grown for sale from the same area, report each crop separately in Item 4.
- Report tobacco transplants that were grown and sold from this operation using code 1004. **Exclude** tobacco transplants that were grown and then transplanted on the same operation.
- Report vegetable transplants that were grown and sold from this operation for transplanting to fields on another operation using code 1006.
- Report vegetable transplants that were grown and sold from this operation for household gardens using code 0479.
- Report acres grown for sale of live Christmas trees (balled and burlapped, potted, etc.) grown on this operation using code 0488. Cut Christmas trees are reported in Section 6, Item 2.
- Blueberries raised and sold for transplanting are reported in Nursery stock, code 0488.

- Report the total value of sales (at point of first sale, wholesale/retail value) for those crops grown on and sold directly from this operation. Report only the wholesale value of crops grown on this operation and sold through a retail outlet which is not part of this operation or if the retail outlet is considered a separate business establishment. Estimate values, if necessary.
- **Exclude** crops bought for resale without additional growing, such as plugs and started plants or garden center items, such as pot liners, chemicals, and fertilizers.

Column 5 – Cash Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales for nursery, greenhouse, floriculture, etc. Marketing expenses include check-off, drying, commission, ginning, inspection, storage, and transportation, etc.

5.6.5 Section 9 – Vegetables, Potatoes, and Melons

Review the crops listed at the bottom of the page before completing this section. Report all of the area for vegetable, potato, and melon crops harvested on this operation. Include yams with sweet potatoes. Exclude vegetables, potatoes, and melons grown for home consumption.

Complete this section if any of the listed crops were grown for sale on this operation in 2017 or if this operation received any income from these crops in 2017.

Report strawberries in section 10, code 0536. Report dry edible peas, dry edible beans, dry lima beans, lentils, and chickpeas in Section 7. Vegetables grown under glass or other protection should be included in Section 8. (**Harvest season** - In all states, except Florida and Arizona, report vegetables harvested in the calendar year 2017. For Florida and Arizona, report vegetables and melons harvested from September 1, 2016, through August 31, 2017.)

Item 2 – Acres Harvested and Irrigated

Report the total harvested acres and irrigated harvested acres of vegetables, potatoes, and melons in whole and tenth acres. Report the area only once regardless how many crops were harvested from the same area. If more than one type of crop was harvested from the same area, report each crop separately in Item 4.

Example: If 20 acres of summer squash were harvested from a field and the same field was replanted in summer squash and harvested again, report only 20 acres of land from which vegetables were harvested in item 2, but report 40 acres harvested in Item 4, summer squash, code 0468. Report the 40 acres in the appropriate columns for fresh market or processing.

Item 3 – Cash Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of vegetables, potatoes, and melons sold from this operation during 2017. Include the value of sales for fresh market or processing and sales to consumers, wholesalers, canners, freezers, dehydrators, or other processors or buyers. Report total value of sales of vegetables grown under glass or other protection in Section 8. **Exclude** the value of the commodities produced under a marketing or production contract and the landlord's share of sales. **Exclude** value-added commodities, to be reported in Section 27, Item 5i.

Marketing and Production Contracts

Report the acreage of all vegetables and melons grown under marketing or production contracts but **exclude** from Item 3, the value of the commodities produced under a marketing or production contract. The dollar amounts received from the contractor for commodities produced under a marketing or production contract are reported in Section 20 or 21.

Two or more pickings of the same crop

Report the acres harvested only once even when two or more pickings were made from the same field.

Potatoes and sweet potatoes raised and sold for seed

Report the acreage of potatoes and sweet potatoes raised and sold for seed as acres harvested for fresh market.

Item 4 – Crop Table

Report the crop listed in the table at the bottom of the page. If a harvested crop's name is not listed in the table, write in the crop name, and other vegetable code 0475, the total acres harvested, the acres harvested for fresh market, and the acres harvested for processing. Report all acreage in whole and tenth acres.

5.6.6 Section 10 – Fruit, Nuts, and Berries

Review the crops listed at the bottom of the page before completing this section. Report the acreage if there were bearing or non-bearing age fruit, tree nuts or berry plants which were maintained for current or future commercial production. Exclude acreage of trees and vines which were abandoned or used for home use.

Complete this section if any of the listed crops were grown for sale on this operation in 2017 **or** if this operation received any income from these crops in 2017.

Native pecan trees are the only native or "wild" tree nuts that are reported. Exclude acreage and sales of black walnuts.

Item 2 – Acres Harvested and Irrigated

Report the total acres and irrigated acres of trees, berries, and vines for fruits and nuts in whole and tenth acres. In the total acreage, include bearing age acres and nonbearing age acres and bearing age acres not harvested due to unsatisfactory prices, labor shortages, etc. If native pecan tree density is less than 20 trees per acre, divide the number of pecan trees by 20 and enter that value as the number of total native pecan acres. Exclude abandoned acres of trees or vines that were not maintained for production and young trees and vines designated for future transplanting and replacement. Report these acres of young trees in Section 8, Code 0488, "Nursery stock."

Item 3 – Cash Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of fruit trees, berries, and vines for fruits sold or moved from this operation during 2017. **Exclude** the value of the commodities produced under a marketing or production contract and the landlord's share of sales. **Exclude** value-added commodities, to be reported in Section 27, Item 5i.

Item 4 – Crop Table

Report all of the area for fruits, nuts and berries harvested on this operation. Write in the crop name, corresponding crop code from the list at the bottom of the page, total acres, bearing age acres, and nonbearing age acres. Report any other non-citrus fruits, other citrus fruits, or other nuts harvested in 2017 but not listed in this section or anywhere on the report form in this section. For crops not listed in the table, print the crop name in the first column and the corresponding "Other" crop code "0261", "0315", "0363", or "539" in the second column. Report the total acres, bearing age acres, and nonbearing age acres.

Report all acreage in whole and tenths acres. The total acres of all trees and vines is equal to the acres of bearing age trees plus the acres of nonbearing age trees. Nonbearing trees that were planted as replacements for trees that died in bearing blocks should have an estimate of the land that they occupied reported in the nonbearing acres column.

- For Florida report the acreage of limes for the April 2017 - March 2018 harvest season. Estimate if necessary.
- Report the acreage of all other citrus crops in all other states for the 2016-2017 harvest season.
- For California report the acreage of avocados for the 2017 crop year, November 1, 2016 - November 30, 2017. The 2017 crop year consists of the fall crop, November 1, 2016 - June 20, 2017 and the spring crop, April 20, 2017 - November 30, 2018. Report the acreage of olives for the September 2016 - March 2017 harvest season.

5.7 Sections 11 to 19 – Livestock

5.7.1 Section Purpose

This section provides a place to record removal, inventory, ownership, and cash sales data for the operation described in Section 1. Livestock removals and sales are used to develop estimates of the value of livestock production. This information allows us to determine the degree to which operations are diversified across varied types of livestock and enables us to assess trends in consolidation of the livestock industry.

Include landlord's share, animals sold on the open market (non-contract), animals removed from this operation under a marketing or production contract in the reference year, and FFA / 4-H livestock projects, in inventory cells.

5.7.2 Section 11 – Cattle and Calves

Report inventories of all beef and dairy cattle and calves on this operation on December 31, 2017 and number of cattle and calves sold or moved from this operation during 2017. Inventories should include cattle on land used rent free or on public, private, or industrial property under a grazing permit, per head, or AUM basis. **Include** cattle located on or fed on this operation for others on a custom or contract basis. **Include** cattle and calves on this operation that were owned by members of the family, i.e. 4-H and FFA project cattle and calves raised on this operation that were owned by a son or daughter. **Include** Beefalo.

Exclude any cattle owned that were being custom fed in feedlots operated by others on December 31, 2017. Do not report the sales of animals bought and then sold within 30 days.

Item 2a – Beef Cows

Report the number of beef cows on this operation and the number owned by this operation on December 31, 2017 that were kept for beef production. Report beef heifers that had calved by December 31, 2017. Beef heifers that had not calved by December 31, 2017 should be reported in Item 2c. Steers, calves, and bulls should be reported in Item 2c.

Item 2b – Milk Cows

Report the number of cows of any breed kept for milk production on this operation and the number owned by this operation on December 31, 2017. **Include** dry milk cows and dairy heifers that had calved by December 31, 2017. Milk heifers that had not calved by December 31, 2017 should be reported in Item 2c.

Item 2c – Other Cattle

Report the combined number of steers, calves, bulls, and heifers that had not calved by December 31, 2017. Also report other cattle that were owned by this operation on December 31. **Include** number of cattle and calves of all ages that were grazing or being fed for others on a custom or contract basis on December 31, 2017 on this operation.

Item 2d – Total Cattle & Calves

Report the total number of cattle and calves of all ages on this operation and the total number owned by this operation on December 31, 2017. Items 2a, 2b, and 2c should add to the number reported here.

Item 3 – Cattle, Calves & Milk Sold or Moved

Record all cattle, calves, and milk that were **sold on the open market, delivered under a marketing contract or removed under a production contract** from the operation from January 1, 2017 through December 31, 2017, regardless of who owned them. "Removed" or "moved" is intended for livestock under a production contract that were never owned by the operation.

Include any cattle, calves, or milk that belonged to landlords, contractors, or any other person.

Exclude animal deaths. Deaths do not add a value of production, and they are not counted.

Do not include animals that were moved from this operation:

- to another operation to graze on winter wheat for a month or two and then returned to this operation
- for short term grazing on corn stubble and then returned to this operation
- for the summer to public grazing land and then returned to this operation
- for the summer to private or grazing association land and then returned to this operation

Item 3a – Calves Sold or Moved

Report the number of calves weighing less than 500 pounds that were sold or moved from this operation during 2017.

Item 3b – Cattle Sold or Moved

Report all the cattle and calves weighing 500 pounds or more that were sold or moved from this operation during 2017.

Item 4 – Milk Sold or Moved

Record the total amount (in hundredweight – CWT) of milk sold on the open market or removed under contract from the operation in 2017 regardless of ownership.

Items 5 to 7 – Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of cattle, calves, and milk from this operation. Marketing expenses include check-off, drying, commission, inspection, storage, transportation, and yardage, etc. (Please see Section 29, item 33 for a full explanation of marketing expenses).

Include:

- Livestock sales received in 2017 from livestock produced in 2016 and earlier years.
- CSA sales are considered a cash sale and not a contract.

Exclude:

- Marketing Contract sales recorded in Section 20, Item 2
- Production Contract movements recorded in Section 21, Item 2
- Landlord share of production, which is recorded in Section 28, Item 3.
- Sales from other farm related activities, such as trading and speculation or livestock dealer activities (recorded in Section 27).
- Value of sales from land rented to others or worked on shares by others.
- Amount received in 2017 for livestock sold in 2016 and earlier years. This is recorded in Section 22, Items 1a and 1a(i) (Accounts Receivable).

Item 5 – Cash Sales of Cattle & Calves minus Breeding Stock

Report the total cash sales received in 2017 of cattle (fed cattle, beef and dairy cull animals, stockers and feeders, beefalo, veal calves, etc.) sold or moved from this operation in 2017.

Include cull bulls. **Exclude** cattle breeding stock.

Item 6 – Cash Sales of Breeding Stock

Report the total cash sales received in 2017 of breeding cattle sold or moved from this operation in 2017.

Exclude cattle grown under marketing contract or production contract on this operation.

Item 6a – Recognized Gain or Loss on Sales of Breeding Cattle

Record the recognized gain or loss on breeding cattle cash sales from Item 6 above.

For raised livestock, the gain will generally be the amount of cash sales proceeds reported above since the costs of raising the livestock have already been deducted as a business expense.

For purchased livestock, the gain or loss is equal to the cash sales proceeds minus any remaining purchase costs that have not already been recovered through depreciation.

Item 7 – Cash Sales of Milk from Cows

Report the total value of cash sales received in 2017 from milk produced and sold from this operation in 2017. Cheese and any other dairy products processed should be recorded in Section 27, Item 5j. Record the value of cash sales before any deduction of hauling fees.

Item 8 – Cattle in Feedlots

Include animals for slaughter market that were fed a ration of grain or other concentrates that are expected to produce a carcass that will grade select or better. **Exclude** cattle that were pastured only, being backgrounded, fed for home use, or veal.

Item 8a – Cattle on Hand Shipped Directly to Slaughter Market

Of the cattle on hand reported in Item 2c, report the total cattle and calves that were on feed December 31, 2017, and were or will be shipped directly from your feedlot to slaughter market.

Exclude veal calves that were fattened primarily on milk, dairy cows that were fed only the usual dairy ration before being sold, and any cattle and calves being preconditioned, backgrounded, or fed a warm-up ration.

Item 8b – Cattle Sold & Shipped Directly to Slaughter Market

Of the cattle reported in Item 3b, report the cattle sold during 2017 weighing 500 pounds or more that were shipped directly from your feedlot to slaughter market. **Exclude** any of your cattle being custom fed in feedlots operated by others. **Exclude** cattle sold as feeders. **Exclude** dairy cows fed only the usual dairy cow ration before being sold.

5.7.3 Section 12 – Hogs and Pigs

Report all hogs and pigs on this operation on December 31, 2017. **Include** hogs grown for others on a contract basis. **Include** hogs on this operation that were owned by members of the family, such as 4-H and FFA project hogs raised on this operation that were owned by a son or daughter. Contractors should only report hogs on land they operate. If the addressee is a contractor or integrator and in 2017 grew no hogs other than those raised for him/her by contractees, do not report any hogs in inventory or any hogs sold. If the addressee was a contractor or integrator and grew hogs himself/herself and had hogs grown for him/her by others, report only the hogs which he/she raised on this operation. **Exclude** hogs grown for the addressee by someone else on another operation under contract.

Item 2 – Total hogs and pigs

Report the total number of hogs and pigs of all ages on this operation and owned by this operation on December 31, 2017. Include those being fed or kept for others under a production contract or an agreement.

Item 3 – Hogs & Pigs Sold or Moved

Report the total number of hogs and pigs sold or moved off the operation, including feeder pigs, in 2017. "Removed" or "moved" is intended for livestock under a production contract that were never owned by the operation.

Exclude animal deaths. Deaths do not add a value of production, and they are not counted.

Items 4 to 5a – Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of hogs & pigs from this operation. **Exclude** contract sales or removals and landlord's share of sales.

Item 4 – Cash Sales of Hogs & Pigs minus Breeding Stock

Report the total cash sales received in 2017 of swine sold or moved from this operation in 2017. **Include** cull breeding hogs. **Exclude** cash sales of breeding hogs. **Exclude** hogs grown under production contract for this operation or on this operation.

Item 5 – Cash Sales of Hog Breeding Stock

Report the total cash sales received in 2017 of breeding hogs sold or moved from this operation in 2017.

Exclude hogs grown under production contract on this operation.

Item 5a – Recognized Gain or Loss on Cash Sales of Breeding Hogs

Record the recognized gain or loss on breeding hog cash sales from Item 5 above.

For raised livestock, the gain will generally be the amount of cash sales proceeds reported above since the costs of raising the livestock have already been deducted as a business expense.

For purchased livestock, the gain or loss is equal to the cash sales proceeds minus any remaining purchase costs that have not already been recovered through depreciation.

Item 6 – Type of Operation

Mark the one type which best describes this operation.

- A farrow-to-wean operation sells or moves pigs from the operation soon after they are weaned from the sow, generally at 2 to 5 weeks of age.
- A farrow-to-feeder operation sells or moves pigs from the operation after the pigs are weaned and fed to a feeder pig weight, approximately 35 to 55 pounds.
- A farrow to finish operation farrows and sells or moves pigs from the operation after they have reached market weight and are sold or moved directly to slaughter.
- A nursery operation buys pigs for or moves pigs to the operation after they have been weaned and will feed them for a short period of time, after which they are sold or moved from the operation to a finishing operation.
- A finish only operation buys pigs for or moves pigs to the operation at weaning weight or feeder pig weight and feeds them until they have reached market weight and are sold or moved directly to slaughter.
- An “other” hog operation could include operations where a majority of production focuses on raising and selling breeding stock. Print the type of hog operation in the response area.

Item 7 – Describe the Producer

Mark the one type that best describes this operation.

5.7.4 Section 13 – Horses, Ponies, Mules, Burros, and Donkeys

Equine include horses, ponies, mules, burros, and donkeys. Include equine of all ages and breeds for all uses. **Exclude** wild horses and zebras.

HORSE BOARDING, TRAINING, RACING OPERATIONS

With the popularity of the equine industry in many States, you may run into an operation that has both agricultural and equine related businesses. Economic surveys like the ARMS and

Census account for agricultural enterprises as defined by the North American Industrial Classification System (NAICS). Commercial equine boarding, training, and racing do not fall into the agricultural category. As a result, income and expense items for these operations should not be recorded if at all possible.

If the operator has a horse boarding, training, or racing operation, determine whether or not the operator keeps income and expenses of the horse operation separate from the agricultural enterprise.

If the financial records are kept **separately**, do not count the horses associated with the horse operation. Also, do not record any income or expenditures of the horse operations in later sections of the ARMS questionnaire.

If the financial records are kept **together**, count the horses associated with the horse operation. Also, record any income or expenditures of the horse operations in later sections of the ARMS questionnaire. Record good notes throughout the questionnaire.

Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of equine from this operation. **Exclude** contract sales or removals and landlord's share of sales.

Item 2 – Horses & Ponies Owned

Report the number of horses and ponies on this operation which were OWNED by this operation on December 31, 2017. **Include** as owned all horses and ponies on this operation even if only partially owned by this operation. Report the number of owned horses and ponies sold in 2017 and cash sales.

Item 3 – Horses & Ponies NOT Owned

Report the number of horses and ponies on this operation which were NOT owned by this operation on December 31, 2017. Report the horse and pony inventory that were not owned by this operation but boarded by this operation for others. An example is if this operation is a boarding stable or racetrack. Report the number of horses and ponies not owned which were sold in 2017 and cash sales.

Item 4 – Mules, Burros, & Donkeys

Report the inventory of all mules, burros, and donkeys on the operation on December 31, 2017 REGARDLESS OF OWNERSHIP. Report the total number of mules, burros, and donkeys sold during 2017 and cash sales.

Item 5 – Horse Breeding or Stud Fees, Semen & Other Equine Products

Report the cash sales of equine breeding service fees or stud fees including sales of semen or other equine products sold in 2017. Record income for services from horses, ponies, burros and donkeys in Section 27, Item 5j.

5.7.5 Section 14 – Sheep and Goats

Report the inventory of sheep and goats on the operation on December 31, 2017, regardless of ownership. Report the number of sheep and goats sold or moved from this operation during 2017, regardless of ownership, and their value of cash sales.

Include:

- Sheep and goats on public or industrial property under a grazing permit
- Sheep and goats on land used rent free by this operation
- Sheep and goats grown or fed on this operation for others on a custom or contract basis

Exclude:

- Sheep and goats grown or fed by someone else on a custom or contract basis

Total Number Sold or Removed in 2017

Record all livestock and livestock products that were **sold on the open market, delivered under a marketing contract or removed under a production contract** from the operation from January 1, 2017 through December 31, 2017, regardless of who owned them. “Removed” or “moved” is intended for livestock under a production contract that were never owned by the operation.

Include any livestock and livestock products that belonged to landlords, contractors, or any other person.

Exclude animal deaths. Deaths do not add a value of production, and they are not counted.

Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of sheep and goats from this operation. **Exclude** contract sales or removals and landlord's share of sales.

Item 2 – Sheep & Lambs

Report the total number of sheep and lambs on this operation or custom fed, regardless of ownership, on December 31, 2017. Report the number of sheep and lambs sold or moved from the operation during 2017 and the value of cash sales.

Item 3a – Angora Goats & Kids

Report the total number of Angora goats and kids on this operation, regardless of ownership, on December 31, 2017. Report the number of Angora goats and kids sold or moved from the operation during 2017 and cash sales. **Include** only Angora goats and kids raised for the production of mohair.

Item 3b – Milk Goats & Kids

Report the total number of milk goats and kids on this operation, regardless of ownership, on December 31, 2017. Report the number of milk goats and kids sold or moved from the operation during 2017 and the cash sales. **Include** only milk goats and kids raised for the production of milk.

Item 3c – Meat & Other Goats and Kids

Report the total number of meat goats and all other goats and kids on this operation not reported in Items 3a or 3b, regardless of ownership, on December 31, 2017. Report the number of meat goats and all other goats and kids sold or moved from the operation during 2017 and the value of cash sales. **Include** Angora goat breeds and milk goat breeds if they are being raised only for meat production.

Item 4a – Wool Shorn

Report the total pounds of wool shorn (whether sold or not), total pounds of wool sold or moved from the operation, and cash sales in 2017. Include pounds shorn whether or not the sheep are currently on the operation. Include the weight of tags shorn in pounds of wool shorn.

Item 4b – Mohair Clipped

Report the total pounds of mohair clipped (whether sold or not), total pounds of mohair sold or moved from the operation, and cash sales in 2017. Include pounds clipped whether or not the goats are currently on the operation.

Item 4c – Milk from Sheep & Goats

Report the cash sales of sheep and goat milk sold or moved from the operation in 2017. Exclude the value of sales of cheese and other processed milk products, to be reported in Section 27, Item 5j.

5.7.6 Section 15 – Aquaculture

Aquaculture is defined as the farming of fish, crustaceans, mollusks, and other aquaculture products. The aquaculture production reported in ARMS/Census requires some form of intervention in the rearing process and requires inputs such as seeding, stocking, feeding, protection from predators, etc. It also requires ownership of the stock being cultivated and harvesting that is conducted in a controlled environment by this operation. Fish, shellfish, and other aquaculture products that are caught or harvested from non-controlled waters or beds (public lakes, rivers, bays, or streams) are considered wild caught and **should not** be included as aquaculture production. Aquatic plants should be reported in Section 8, Nursery, Greenhouse, Floriculture, Sod, Mushrooms, Vegetable Seeds, and Propagative Materials. Algae is included here in Section 15, Aquaculture.

Examples of controlled environments include:

- Ocean-raised fish in pens, cages, etc.

- Leased, owned, controlled, or managed beds including exclusive use of public water area for shellfish
- State, Federal, Reservation, and privately owned fish hatcheries
- Tanks for the shedding of soft-shelled crabs

The area of the controlled environment of this operation should be included in Section 1, Item 1 or 2 and Item 4. The area of land and water area associated with these production areas should be included in Section 2, Item 4 and Item 5.

Review the aquaculture types listed at the bottom of the page in the report form before completing this section. Print the name of the aquaculture type and the corresponding code from the list at the bottom of the page. Report pounds **OR** number sold of all species sizes and/or eggs of one species type under the corresponding aquaculture type and code. Do not report pounds **AND** number of the same species. For example, if you raised trout and sold some as food size and some as fingerlings report all food size and fingerlings under Trout, code 0863, and report all the pounds **OR** number sold or moved from this operation in 2017.

Report the pounds or number sold or moved from this operation whether wholesale, retail, or on a contract basis or consignment. Include the aquaculture raised by Federal, State, Reservation, and privately owned hatcheries and sold or moved for stocking public waters or distributed for conservation purposes. Estimate the market value for the value of sales if distributed and not sold. Report the gross value of sales for each aquaculture type sold or moved from this operation. Exclude aquaculture grown for home consumption.

All other aquaculture and aquaculture products such as frogs, turtles, caviar, eels, alligators, sea urchins, snails, tadpoles, live rock, etc., should be reported as code 0869, (other aquaculture products).

Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of aquaculture from this operation. **Exclude** contract sales or removals and landlord's share of sales. Estimate the market value for cash sales, if necessary. Report the cash sales for each aquaculture type sold or moved from this operation. **Exclude** animal deaths. Deaths do not add a value of production, and they are not counted.

5.7.7 Section 16 – Poultry

Report inventories of all poultry including layers and all meat-type birds on this operation regardless of ownership on December 31, 2017. Poultry also includes exotic or game birds such as emus, ostriches, ducks, pheasants, quail, etc. Report the number sold or moved from this operation during 2017. **Include poultry raised for others on a contract basis when reporting the inventory and number sold or moved from this operation.**

If the number sold or moved from the operation is not known, an estimate should be given. Roasters, capons, and Cornish not used for breeding should be reported in Item 2a with broilers, fryers, and other meat-type chickens.

Poultry should be reported by the person who actually raised the birds even though he may not be the person who owns the poultry.

Exclude animal deaths. Deaths do not add a value of production, and they are not counted.

Exclude poultry owned by you but raised by someone else on another operation under contract.

Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of poultry from this operation. **Exclude** contract sales or removals and landlord's share of sales.

Item 2a – Broilers, Fryers, & Other Chickens Raised for Meat Production

Report the number of broilers, fryers, capons, roasters, and other meat-type chickens on this operation and the number owned by this operation on December 31, 2017, including those raised under contract. In column 3, report the number sold or moved from this operation during 2017, including those raised under contract. **Include** only birds raised for meat production. **Exclude** meat-type hatching layers which should be reported in Item 2c. For column 4, **exclude** the value of poultry produced under marketing and production contracts.

Item 2b – Table Egg Layers

Table egg layers are female chickens that can produce a marketable egg suitable for table use or infertile eggs for human consumption. Female chickens that are too young to produce a marketable egg are pullets. Report the number of table egg layers on this operation and the number owned by this operation on December 31, 2017, including those under contract. **Include** the number of table egg layers in molt. In column 3, report the table egg layers sold or moved from this operation during 2017, including those under contract. **Include** layers used to produce eggs for home consumption, and "yard chickens." **Exclude** layers from exotic breeds and game birds. For column 4, **exclude** the value of poultry produced under marketing and production contracts.

Item 2c – Hatching Layers for Meat Types

Layers are female chickens which can produce a marketable egg. Female chickens that are too young to produce a marketable egg are pullets. Hatching layers for meat types are layers of meat-type strains that produce fertile eggs that could supply a hatchery to produce meat type chicks. Report the number of hatching supply layers for broilers, roasters, and other meat types on this operation and the number owned by this operation on December 31, 2017, including those under contract. In column 3, report any of the hatching supply layers for meat types sold or moved from this operation during 2017, including those under contract. **Exclude** broilers or other chickens raised for meat production, which should be reported in Item 2a. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 2d – Hatching Layers for Table Eggs

Layers are female chickens which can produce a marketable egg. Female chickens which are too young to produce a marketable egg are pullets. Hatching layers for table eggs are layers that produce fertile eggs, which could supply a hatchery to produce table-egg chicks. Report the number of hatching supply layers for table-egg types on this operation and the number owned by this operation on December 31, 2017, including those under contract. In column 3, report any of the hatching supply layers for table eggs sold or moved from this operation during 2017, including those under contract. **Exclude** layers for table eggs or "market" eggs, which

should be reported in Item 2b. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 2e – Pullets for Laying Flock Replacement

Report the number of chicken pullets for laying flock replacement on this operation and the number owned by this operation on December 31, 2017, including those under contract. In column 3, report the total number sold or moved from this operation during 2017, including those under contract. **Include** the pullets intended for laying flocks of table-egg layers, or hatching supply flocks for meat-type, or hatching supply flocks for table-egg types. Pullets are female chickens which are too young to produce a marketable egg. Female chickens which are mature enough to produce a marketable egg are layers. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 2f – Chicken Eggs

Record the total number (in dozens) of all chicken eggs (including hatching eggs), sold on the open market or removed under contract in 2017, regardless of ownership.

Report the total cash sales received in 2017 of eggs sold from this operation in 2017. Do not report the value of eggs produced under marketing and production contracts.

Item 3a – Turkeys for Meat Production

Report the number of turkeys raised for immediate slaughter on this operation and the number owned by this operation on December 31, 2017, including those raised under contract. In column 3, report the number of turkeys for meat production sold or moved from this operation during 2017, including those raised under contract. **Exclude** turkey hens and toms kept for breeding, which should be reported in Item 3b. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 3b – Turkey Hens & Toms Kept for Breeding

Report the number of turkey hens and toms kept for breeding on this operation and the number owned by this operation on December 31, 2017, including those under contract. In column 3, report the number of turkey hens and toms kept for breeding sold or moved from this operation during 2017, including those under contract. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 3c – Turkey Brooders for Further Growout on another Farm

Report the number of turkey brooders on this operation and the number owned by this operation on December 31, 2017, which **were moved or will be moved** to another farm for further growout. In column 3, report the number of turkey brooders that have been moved to another farm for further growout during 2017. Turkeys that will be sold or moved from this operation directly to slaughter should be reported in Items 3a or 3b, not in Item 3c. For column 4, exclude the value of poultry produced under marketing and production contracts.

Item 4 – All Other Poultry

Report the inventory of all other poultry on this operation and the number owned by this operation on December 31, 2017, not accounted for in Items 2 and 3. Enter the name of other poultry species in the first column provided. Enter the corresponding code in the second column. Report the inventory and number sold or moved from this operation during 2017, including those raised under contract. Birds such as pheasants or chukars used for conservation, restoration, or hunting, such as on a game farm, should be reported only by the operation which raised the birds. Only the market value of the birds raised is included in the cash sales and the balance of hunting fees received that is attributed for guide services, lodging, or transportation is reported in Section 27, Item 5j. **Exclude** birds such as canaries. They are reported in Section 18, Item 2, "Other Livestock." For column 6, **exclude** the value of poultry produced under marketing and production contracts.

Item 5a – Poultry Hatched

Report all types of poultry hatched on this operation in 2017. The number hatched includes all poultry hatched on your operation and placed, sold, or destroyed. Specify the kinds of poultry hatched (chickens, turkeys, ducks, pheasants, emus, etc.). Do not include poultry hatched on this operation as sold in Items 2 through 4, unless raised past the newly hatched stage of development. For example, chicks hatched and moved from this operation the same day should be reported only in Item 5, not in Item 2.

Item 5b – Type of Poultry Hatched on this Operations Hatcheries

For the poultry hatched in Item 5a, check the type(s) of the poultry hatched. Check all that apply.

5.7.8 Section 17 – Colonies of Honey Bees

Item 2 – Colonies of Bees Owned

Report the inventory of honey bee colonies of bees owned, regardless of location on December 31, 2017 in column 1. Report the largest number of honey bee colonies owned for all purposes in 2017 in column 2, including the number of colonies from which no honey was harvested.

Exclude package bees; they are not considered as separate colonies. Package bees are reported in Section 18, Item 2. Report the largest number of honey producing colonies owned in 2017 in column 3.

Report the total pounds of honey collected in 2017, whether or not it was sold. Report the cash sales of honey in 2017, regardless of which year the honey was produced. Report sales of beeswax, pollen, royal jelly, etc. in Section 18, Item 3. Report sales of colonies in Section 18, Item 2.

Fees received from pollination services should be reported in Section 27, Item 5j as "all other farm related sources of income".

5.7.9 Section 18 – Other Livestock and Livestock Products

Report all other livestock, animal specialties, and their products not reported in previous sections. Report the inventory of alpacas, llamas, bison, deer in captivity, elk in captivity, live mink, live rabbits, lab animals, worms, etc., raised in captivity that were on this operation and owned by this operation on December 31, 2017. Report the total number sold from this operation during 2017, including those raised under contract. **Exclude** animals and products owned by the addressee but raised on another operation under contract.

Cash or Open Market Sales minus Marketing Expenses

After subtracting marketing expenses, record the amount received in 2017 from cash sales of other livestock from this operation. **Exclude** contract sales or removals and landlord's share of sales.

Alpacas

Report the total and owned inventory of alpacas on this operation on December 31, 2017, including those raised under contract. Report the total number sold from this operation during 2017, including those raised under contract. Also record any cash sales.

Llamas

Report the total and owned inventory of llamas on this operation on December 31, 2017, including those raised under contract. Report the total number sold from this operation during 2017, including those raised under contract. Also record any cash sales.

Bison

Report the total and owned inventory of bison raised in captivity on this operation on December 31, 2017, including those raised under contract. Report the total number sold from this operation during 2017, including those raised under contract. Also record any cash sales.

Deer in Captivity

Report the total and owned inventory on this operation on December 31, 2017 including those raised under contract. Report the total number sold in 2017 of deer raised in captivity. Also record any cash sales.

If the deer were raised in captivity on an operation which is a game farm and a hunting fee was received for the deer, allocate the fee between the Cash Sales and Fee Received in Section 27. Only the market value of the deer is included in the Cash Sales column and the balance of the hunting fee received that is attributed for guide services, lodging, or transportation is reported in Section 27, Item 5j.

Deer "raised in captivity" are deer confined to the operation with fencing that require inputs such as feed, veterinary services, etc. The deer may have been purchased from other producers and transported and cared for within the confines of this operation. **Exclude** wild deer on the operation.

Elk in Captivity

Report the total and owned inventory on this operation on December 31, 2017 including those raised under contract. Report the total number sold in 2017 of elk raised in captivity. Also record any cash sales.

If the elk were on a game farm and a hunting fee was received for the elk, split the fee between the Cash Sales and Fee Received in Section 27. Only the market value of the elk is included in the Cash Sales column and the balance of the hunting fee received that is attributed for guide services, lodging, or transportation is reported in Section 27, Item 5j.

Elk "raised in captivity" are elk confined to the operation with fencing that require inputs such as feed, veterinary services, etc. The elk may have been purchased from other producers and transported and cared for within the confines of this operation. **Exclude** wild elk on the operation.

Live Mink

Report the total inventory, owned inventory, and number sold in 2017 of live mink raised on this operation. Also record any cash sales. Mink pelts should be reported only in Item 3.

Live Rabbits

Report the total inventory, owned inventory, and number sold in 2017 of live rabbits raised on this operation. Also record any cash sales. Rabbit pelts should be reported only in Item 3.

Package Bees

Report the total inventory, owned inventory, and number sold in 2017. Package bees are honey bees sold by the pound, with or without the queen. Inventory should be recorded as number of packages, not pounds sold. Nucleus colonies, "nucs", whole colonies sold, and individually sold queens should be counted under "Other Livestock" with code 4898.

Bees, Other than Package Bees

Report the total inventory, owned inventory, and number sold in 2017 of all bees other than honey bees. Inventory and sales should be recorded as the number of kits, hives, boxes or sets of bees sold. Solitary bees should not be counted individually, rather as the whole unit they are sold in. For example, bumble bees should be counted by the hive, not by the individual bee. Include leaf cutter bees. Wild caught mason, carpenter, or other bees should be excluded.

Other Livestock

Report the total inventory, owned inventory, and number sold of any other livestock and animals (worms, ladybugs, lab animals, snakes, package bees, canaries, etc.) raised in captivity for sale on this operation on December 31, 2017 and not previously reported on this report form. Print the name of the livestock in the specify area, the total and owned inventory on this operation on December 31, 2017, the total number sold from this operation during 2017, and any cash sales.

Item 3 – Other Livestock Products

Report the production of all other livestock and livestock products and value of sales including semen, embryos, manure sold, beeswax, bee pollen, feathers, worm castings, or other livestock or animal products produced and sold from this operation during 2017. **Exclude** value added products such as cheese, candles and lotions (reported in Section 27, Item 5J). Print the type of product and indicate the unit (tonnage, pounds, etc.) used in reporting the product.

5.7.10 Section 19 – Other Operations Growing/Feeding/Raising Livestock for this Operation

If this operation paid another operation a fee for the service of growing, feeding, or raising a commodity (owned by the selected operation), then answer this question 'YES' (the operation is acting as contractor).

The commodity remains an asset of the selected operation. (It is neither sold to the contractee operation, nor is ownership transferred to that operation.) Summary formulas add these items to expenses or assets when appropriate.

Keep in mind that any livestock, sales, or expenditure data recorded in this section are not recorded anywhere else on the questionnaire. This is referred to as the “in the fence” rule.

Examples of these types of contracts include:

- A cow/calf producer who has calves fed out through a feedlot.
- A dairy producer who pays another operation to raise the dairy producer's replacement heifers. (See special handling instructions for this type in Column 6 instructions below.)
- A hog farrowing operation that contracts with another operation to raise feeder pigs up to slaughter weight.

Example:

Respondent has a Production Contract with a Feedlot and a Marketing Contract with a Meatpacker

In this case the respondent is the owner of the cattle, and has a production contract with a feedlot (the respondent is the contractor). This contract should be reported in Section 19. This includes all expenses paid or reimbursed by the respondent (contractor) to the feedlot. These expenses should **only** be recorded in Section 19. They should not be recorded in Section 29 (**Section 29 is used to record expenses incurred on the respondent's operation**).

If the finished cattle are removed for slaughter from the feedlot, the receipts from the sale of the cattle should be recorded in Section 19, regardless of whether the sale is made by the respondent or by the feedlot acting on the operator's behalf. If the cattle are returned to the operation prior to sale, then the receipts from the sale should be recorded as a cash sale in Section 11 or as a marketing contract sale in Section 20.

If the feedlot was also a respondent, the feedlot would report a production contract in Section 21 and would report the expenses that were paid by the cattle owner (contractor) in Section 29,

Column 3. Any other expenses associated with the production contract and not paid by the cattle owner (contractor) would be reported in Section 29, Column 1.

Column 1 – Commodity Contracted Out

Record the type of commodity that was placed on another operation to be fed or raised. **Include** commodities that were placed on contractee operations prior to January 1 and were still under contract on January 1 of the reference year.

Column 2 – Livestock Code

Record the livestock code from the Respondent Booklet that relates to the commodity identified in Column 1.

Column 3 – Market Value of Commodities under Contract on January 1

Record the estimated market value of all of this operation's commodities under contract as of January 1.

Make sure this value is not recorded in Section 30 (Farm Assets).

Column 4 – Estimated Market Value of Commodities Placed

Using the market price at the time the commodity was placed, record the estimated value of the contracted commodities this operation placed on contractee operations during the reference year. If more than one arrangement existed, or if arrangements existed for more than one commodity, record each one on a separate line.

Column 5 – Production Expenses and Fees Paid to Contractees

Record the total amount this operation paid to contractees for labor fees, management fees, and reimbursements for expenses.

Make sure this value is not recorded in Section 29 (Expenses). Section 29 is used to record expenses incurred on the respondent's operation.

Column 6 – Gross Receipts from Contracts

Record the gross income to this operation from sales of commodities produced under this contract by other operations (quantity times market price) during the reference year.

This item will be zero for all replacement animals (such as dairy replacement heifers) that are removed back to the respondent's (contractor's) operation.

Make sure this value is not recorded anywhere else in Sections 11-18 (Livestock) or 20 (Marketing Contracts).

Column 7 – Market Value of Items Under Contract on December 31

Record the estimated market value of commodities still under contract as of December 31.

Make sure this value is not recorded in Section 30 (Farm Assets).

5.8 Sections 20 to 22 – Marketing/Production Contracts, Accts. Receivable

5.8.1 Overview

Importance of Obtaining Information on Marketing and Production Contracts

The contracting information collected on this survey is USDA's only source of data to separate production, income, and expenses among operators, contractors, landlords and others. To show an accurate picture of both the value of the farm sector's output and the financial condition of farming operations, we must fully account for other businesses or individuals who provide inputs used on the farm to produce agricultural commodities and who receive income from the sales of these products. For these reasons, collecting complete and accurate information on contracting is critical.

Previous ARMS surveys show widespread and growing use of production and marketing contracts. As contractees, producers sometimes use contracts because they can reduce price risks, and they sometimes use them to reduce input financing requirements. As contractors, processor-buyers often use contracts to obtain consistent supplies of commodities with specific desired qualities.

If the operator has multiple operations, only account for the income that belongs to the operation identified on the label. For operators with multiple operations, keep in mind the acres and livestock reported in the previous sections because they define the selected operation and answers should relate directly to that operation. Income from the other operations is accounted for in Section 37.

Terms – Contractor versus Contractee

The respondent is a **contractor** when another operation produces crops, livestock, or poultry under agreement for the respondent. If the respondent is a **contractor**, you should record that information in Section 19.

The respondent is a **contractee** when he/she produces and/or markets the commodity under a contractual agreement with another farm operation or entity such as a packer or processor. That information is recorded in Section 20 or 21, as Marketing Contracts and/or Production Contracts.

An operation may act as the **contractor** or **contractee** or both.

For hog and cattle operations, pay close attention to pricing terms and animal ownership (owned and non-owned animals in Sections 11-18) under contracts because both marketing and production contracts are common. Non-owned animals are a strong clue for the presence of a production contract.

Details of Marketing and Production Contracts

Contracts are formal agreements (written and verbal) that are reached prior to the harvest of a crop, or prior to the completion of a normal production cycle for livestock or poultry. Verbal agreements are contracts if they contain a commitment to provide inputs or commodities such that failure to meet the commitment will incur penalties.

For purposes of this survey, we only want to count contracts as those agreements reached before crop harvest or before completion of a livestock production phase. All sales made from inventory should be considered cash sales and reported in their respective commodity section (Sections 5-18). A marketing contract that has not been delivered should not be recorded as a marketing contract since technically, the operator still has the control of the commodity. When this occurs the commodity is an asset to the farm and should be recorded in Section 30 Item 6.

Marketing pools occur in some States where a group of producers will combine or “pool” their crop or livestock commodities for sale and delivery to a buyer to save on hauling expenses and/or marketing charges. If the pool agreement occurred after harvest or completion of the livestock production, this should be considered a cash sale and reported in its respective commodity section.

The ARMS recognizes two kinds of agricultural contracts:

- 1) **Marketing** contracts identify an outlet for a commodity and set pricing and delivery specifications. In a marketing contract, the operator (contractee) assumes most of the financial risk for inputs. Although marketing contracts are more common for crops, they are also used to market livestock and/or livestock products. Marketing contracts account for a growing share of fed cattle shipments from feedlots to meatpackers. Record custom-fed cattle, owned by someone other than the respondent, under production contracts.
- 2) **Production** contracts cover an entire production cycle for a commodity. They specify responsibilities for the provision of inputs and the payment of expenses by different parties to the contract, and they also specify rules for compensation, production practices, and commodity removal from the operation. In a production contract, the contractor assumes most of the price risk.

Contracts can take on many different forms. The accompanying table provides an overview of contract features, and lists how we want to distinguish between marketing contracts and production contracts for the purposes of this survey.

Marketing Contracts	Production Contracts
Contractor:	Contractor (<i>Integrator</i>):
<ul style="list-style-type: none"> • Arranges, prior to <i>completion</i> of a production cycle, to acquire a specified commodity at the end of the cycle. • Commits to take a quantity and agrees on a price, a pricing arrangement, or an agreement to sell on behalf of the contractee. • Does not take ownership of the commodity until it is delivered. • Makes few or no production decisions but may require specific inputs (variety of seed, etc.) to be used. 	<ul style="list-style-type: none"> • Arranges, prior to <i>beginning</i> a production cycle, to have a specified commodity produced. • Commits to a fee or fee arrangement to be paid to the contractee. • Usually owns the commodity during production. • Makes many production decisions.
Contractee (<i>Operator</i>):	Contractee (<i>Operator</i>):
<ul style="list-style-type: none"> • Obtains a buyer and a marketing arrangement for commodities before completion of a production cycle. • Supplies and finances all or most of the inputs used in production. • Owns the commodity while it is being produced. • Makes all or most production decisions. • Often bears all production risks, and contract frequently limits some price risks. • Receives the major share of the value of production. 	<ul style="list-style-type: none"> • Provides labor and some management services used in production, as well as fixed inputs (land, buildings, etc.), for a fee. • Supplies only some inputs used in production. • Usually does not own the commodity. • Makes only a few production decisions. • Often bears no price risks, and contract may limit production risks or reward efficiency. • Receives a fee that is usually only a small share of value of production.

Marketing Contracts:

For the purpose of this survey, a marketing contract for a commodity is recorded when the following two events occur:

- A verbal or written agreement to market the commodity is reached **before completion** of a normal production cycle (prior to harvest for crops, prior to removal from the operation for livestock). The agreement will include a price, an arrangement for determining price, or (in the case of marketing pools or some operating cooperatives) a commitment by the contractor to negotiate for a price on the contractee's behalf.
- Delivery of the commodity has taken place so that the operator does not have control of the commodity. "Delivered" includes commodities for which partial payment was made even if not physically delivered by December 31.

Characteristics of marketing contracts:

- Attribute-related price terms are often expressed as deviations from a base price tied to overall market conditions (incentives) and often set prices according or require delivery of commodities with certain measurable qualities. Examples include high oil corn, low linoleic soybeans, or organic apples.
- Prices often vary with the attributes of the commodity produced, as in grade and yield contracts for cattle or oil content for high-oil corn contracts that reward the contractee for higher oil content.

Marketing contracts may include:

- forward sales of livestock or a growing crop (or a crop to be grown). The contract identifies a window, or a specific date, for delivery, and it will set a price or specify how price will be determined.
- agreements made with processors to deliver commodities with certain measurable qualities
- agreements to set prices according to realization of the qualities. Examples include high oil corn, low linoleic soybeans, or organic apples
- milk contracts to market milk for the coming year through a co-op with prices determined later through a pricing formula that is applied 30 days after delivery of the milk. (Perishable products are usually priced after delivery.)
- a marketing pool. Farmers may agree to pool their crop and sell along with other producers through a cooperative or other pooling firm. The final price received is determined by the net pool receipts for the quantity sold (by selling a larger amount the pool may get a better price). Farmers may have to wait a year or more to receive final payment and decisions related to selling are made by the pool manager. Pooling is common in rice and cotton marketing.

Marketing contracts are typical on farms that:

- grow citrus fruits, other fruits, or nuts
- grow ornamentals or horticultural crops
- produce fresh vegetables
- grow potatoes
- grow sugarbeets, sugarcane, peanuts, dry peas or dry beans
- produce fluid milk
- sell fed cattle directly to slaughter or meatpackers

Production Contracts:

Production contracts are used for livestock, poultry and crop production. Under poultry or livestock production contracts, the farm/ranch operator (for example, a feedlot or broiler grower) houses and feeds the poultry or livestock until they reach a specified age or weight. The contractor usually provides many production inputs and reimburses the contractee for input expenses incurred while the commodity is on the contractee's operation. For example, in broiler contracts, the contractor normally provides chicks, feed, chemicals, transportation, and technical assistance. The contractor may also reimburse the contractee for LP gas used, bedding, etc.

Under crop production contracts the contractor often supplies inputs such as seeds or plants, fertilizer, chemicals, transportation and technical assistance. Examples include processed green peas, sweet corn, and snap beans; seed corn; vegetable seeds; popcorn; and beets.

Characteristics of Production Contracts:

The contractee and contractor reach agreement **before production begins**, and the contract provides considerable detail on specifics such as fees, responsibility for input provision, and product ownership. Contractees may provide labor, farm management services, utilities, housing, and equipment. Contractees usually receive fees for their services that are considerably less than the full market value of the commodity and are reimbursed for covered expenses.

Strong clues to the presence of a production contract (even if not reported) is non-owned livestock that are recorded in Sections 11-18, and little or no livestock sales dollars reported. Contract fees may be reported as custom work income. The operator may also report livestock or poultry facilities and/or livestock production expenses, with few or no livestock owned. The non-owned animals are almost certainly being produced under contract.

Production contracts are typical on farms that:

- have broiler houses or other poultry and/or egg producing facilities
- have hog nursery or confinement feed arrangements
- provide 'custom-feeding' services for cattle
- produce vegetables for processing
- produce seed crops

5.8.1.1 Special Topics

Feedlot Operations:

Cattle in feedlots may be owned by the feedlot operator, or they may be custom-fed by the feedlot for an owner, under a production contract between the feedlot (the contractee) and the owner (the contractor). Feedlot respondents should record production contracts in Section 21 for the "custom fed" cattle that they feed under production contracts. Contractee fees should include only overhead (farm management services, utilities, housing, and equipment), labor, and margin on pass through input items. Expenses paid or reimbursed by the owner (contractor) to the feedlot should be reported in Section 29 in the "contractor" column. Fed cattle are also often sold to meatpackers under marketing contracts. Here are the specifics for recording transactions:

- Respondents who own cattle that are custom fed at a feedlot, returned to the respondent, then sold to a packer through a marketing contract should record the Marketing Contract in Section 20, and should record the Production Contract with a feedlot in Section 19 (in their capacity as a contractor).
- Respondents who own cattle that are custom fed at a feedlot, then sold to a packer directly from the feedlot through a marketing contract should record the sale in Section 19, Column 6. They should also record the rest of the production contract with a feedlot in Section 19 (in their capacity as a contractor).
- Feedlot respondents should only record marketing contract sales in Section 20 for those cattle that the feedlot owns, not for custom fed cattle owned by another entity. One should be skeptical of a respondent that has non-owned cattle on the operation and wants to record a large value for custom work performed. This usually indicates that a production contract should be completed. Do not confront the operator but collect information as instructed by the office and take good notes.
- If a feedlot grows any crop that was fed to non-owned livestock as part of a production contract with the livestock owner, do not record the production as used on the operation in Sections 5-10. This production should be recorded as a cash sale to the livestock owner and the same value for the crop sold should be recorded as a contractor expense in Section 29, Item 6. Verify that the production contract fees do not include payments to the feedlot for feed costs.

Livestock on Shares:

The production of livestock, primarily cattle, "on shares" is common in Montana, North and South Dakota, Nebraska, and other states. For example, an individual who owns beef cows places them on someone else's land. The land operator cares for the cows and calf crop. The cattle owner and land operator share the calf crop in a 50-50, 60-40, 70-30, or other agreed to arrangement. Instructions and a detailed example are provided in Section 5.8.3.1.

Contractee is Part of another Business:

An operation such as an egg hatchery may be owned by the business it contracts with. In this case, unit fees/prices and total receipts will not be available since no market transaction takes place. In most cases the operation will have recorded a "book value" for the commodity it produced. Use the book value if available, to record unit price/fee and total receipts for Section 21.

Reimbursement for Expenses in Production Contracts:

Contractees in production contracts sometimes purchase some variable inputs, and reimbursement for their expenses is added to the amount paid for contractee services. Settlement sheets or other contract documents usually break out reimbursed expenses. Since we want to collect data on reimbursed expenses separately, they should be included in Section 29, Column 3 under the appropriate item.

Futures Contracts Obtained for the Purpose of Hedging:

Such contracts should not be reported as marketing contracts. Hedging occurs when the farmer takes opposite positions in the futures and cash markets. It allows farm operators to now fix the price of products they intend to sell later. For example, farmers who are growing a commodity for sale are said to be "long" in the cash market. The appropriate hedge is to sell futures. Then, when the farmer sells his commodity, he buys back his futures contract, preserving a price. This type of transaction should be recorded in two places. The actual sale of the commodity should be recorded in Sections 5-10, under the appropriate sales commodity. The net profit or loss from hedging should be recorded in Section 27, Item 5j as "all other farm related sources of income".

Dairy Futures Contracts:

It is easy to confuse milk marketing contracts with a futures contract as described above. An indication of futures hedges is when more than two marketing contracts exist for milk production. (A producer almost never sells to more than two milk buyers.) Futures contracts are NOT marketing contracts. They should be recorded like the crop hedges mentioned above. The sale of the commodity (milk) should be recorded as a marketing contract in Section 20 or a cash sale in Section 11. Any profit or loss from these futures contracts are recorded in Section 27, Item 5j as "all other farm related sources of income".

Grain Delivered With High Moisture:

There may be seasons, where a number of operators will deliver grains that exceed the moisture standard for that commodity. The amount operations are paid are affected by two

different methods: Shrink and Dock (an additional fee for drying). They are handled differently when it comes to prices/amount received as well as marketing charges.

Shrink:

Some elevators apply a percentage reduction to gross weight delivered. This is essentially adjusting the load of the commodity down to what it would weigh at standard moisture. For example, Joe Farmer brought in a semi-load of corn with a weight of 33,000 pounds, at 17 percent moisture. The elevator would “shrink” the weight and Joe Farmer would be paid on 32,340 pounds of corn at 15 percent moisture. Shrink is NOT a marketing charge. For marketing contracts, record the shrunk bushels (standard moisture) as delivered and the price per delivered bushel. This should be consistent with other NASS surveys.

Dock (additional fee for drying):

If an elevator charges a fee per bushel for drying, it is a marketing charge and is known as a “dock”. Record the total amount docked (or paid for the extra drying) as a marketing charge and make sure that price per bushel and total amount received exclude the marketing charges as instructed on the questionnaire.

Inferior Quality Grain Delivered:

If the operator gets a reduction in pay for inferior quality grain being delivered, it is NOT a marketing charge. Inferior grain contains things like mold, weevils, foreign matter, etc. The grain can still be marketed despite being inferior quality unlike if the grain had too high of moisture content. Record bushels delivered and the delivered price.

5.8.2 Section 20 – Marketing Contracts

Item 1 – Presence of Marketing Contracts

If the operator had any marketing contracts (as defined above), check “Yes” and continue. **Exclude** CSA sales because contract sales are for one specific crop guaranteeing a price or pricing mechanism at the time of delivery. CSA sales are considered a cash sale of multiple products.

Item 2 – Marketing Contracts

Include contracts made in prior years but delivered in the reference year. Make sure the contract meets the definition of a contract above. “Delivery” includes commodities for which partial payment was made even if not physically delivered by December 31.

Exclude arrangements where a price formula or price was set prior to the completion of a normal production cycle but delivery has NOT occurred.

Column 1 – Commodity

Show the respondent the list of Crop and/or Livestock Codes in the Respondent Booklet. Record each commodity for which the operation delivered a set quantity marketing contract in the reference year.

Column 2 – Commodity Code

Record the commodity code that relates to the commodity identified in Column 1.

Column 3 – Quantity Delivered

Record the total amount of the commodity delivered under the contract. Do not include the landlord's share of production even if it was delivered along with the operation's share.

Column 4 – Unit Code

Record the code that represents the commodity unit (specified in the contract), such as pounds, tons, bushels, head, etc. If a unit other than those indicated on the questionnaire is reported, make good notes. **Be careful with the units** because many analysis' issues later are caused by conflicts between data here and in the previous crop section.

Column 5 – Price per Unit

Record the final price, net of marketing charges, in dollars and cents (to the nearest cent [. __ __]) per unit, that the operation has or will receive for all of the production delivered under the contract. For commodities that receive payments monthly such as milk, the final price will be an **average** price calculated from the quantity and price received for each month covered by the contract. **Final price is not the last month's price received for the year (e.g. December).** The respondent may have to estimate this price.

Column 6 divided by Column 3 will equal Column 5 **ONLY** when the operation was paid in full during the reference year for the commodity delivered under the contract. Use caution if you calculate final price by dividing Column 6 by Column 3. Make sure the operation received full payment during the calendar year for the contact.

Be sure the unit for the price reported agrees with the unit for the quantity reported. Cotton is an example. A common mistake is to record cotton sales in bales, but price as a price per pound. Consider an example where a single bale was contracted at 65 cents per pound. If you recorded "1" in Column 3, Code 7 (for bales) in Column 4 and .65 in Column 5, the gross income to the operation would show up as 65 cents. Assuming a standard bale weight of 480 pounds, you came up short by \$311.35 (the price per BALE is $480 \times .65 = \$312$)!

Column 6 – Total Amount Received

Since total payments are not always received in the calendar year of production, you always have to ask this question in order to complete this Column correctly. Record the total amount the operation **received during the calendar year** for sales under the marketing contract.

For some commodities, this is always less than the quantity delivered times the per unit price, because price is not known until the commodity is fully marketed by the agent the following year. Sometimes the producer is not paid at all until after the first of the next year. If the operation did not receive any payment under the contract in the reference year, enter a dash and make a note.

Be sure any marketing charges related to sales under the contract are subtracted out and recorded in Section 29, Item 33. If the operation did not receive all of the payments owed to

them under the contract in 2017 (Column 6 is less than Column 3 times Column 5), the remaining amount owed must be accounted for as an asset in accounts receivable in Section 22, Item 1b.

The following two tables can be used as a guide to help record Marketing Contracts, Cash Sales, Assets, Accounts Receivables, and Deferred Payments. This table is courtesy of the Northern Plains Regional Field Office.

2016 Crop:

Situation	Record As:
In Storage	
At End of 2016	ASSET (January 1, 2017)
Sold 2016 Stored Crop on Open Market during 2017	CASH SALES
Sold for Cash	
Delivered in 2016 & NO Pmt Rcvd in 2016	Acct Rec / Def Pmts (January 1, 2017)
Set Up as Marketing Contract	
Delivered in 2016 & NO Pmt Rcvd in 2016	Acct Rec / Def Pmts (January 1, 2017)
For Delivery in 2017 and Pmt in 2017	ASSET (January 1, 2017) AND In Marketing Contract Table

2017 Crop:

Situation	Record As:
Sold for Cash	
Delivered in 2017 & Pmt Rcvd in 2017	CASH SALES
Delivered in 2017 but NO Pmt Rcvd in 2017	Acct Rec / Def Pmts (Dec. 31, 2017)
Set Up as Marketing Contract	
Delivered in 2017 & Pmt Rcvd in 2017	Marketing Contract Table
Delivered in 2017 but NO Pmt Rcvd in 2017	Column 6 Blank in Marketing Contract Table AND Acct/Rec / Def Pmts Positive (December 31, 2017)
NOT Delivered in 2017 but Pmt Rcvd in 2017	Marketing Contract Table
NOT Delivered in 2017 & NO Pmt Rcvd in 2017	ASSET (December 31, 2017)
For Delivery in 2018 & Pmt in 2018	ASSET (December 31, 2017)
In Storage	
At End of 2017	ASSET (December 31, 2017)