



REPORT BY THE U.S.

RELEASED

# General Accounting Office

## How The Content Of The Agricultural And Economic Censuses Is Determined And Used

These two censuses satisfy the Government's needs to determine the status and trend of the Nation's agricultural and economic activities. The Department of Agriculture, however, the primary Federal user of the agricultural census data, has reduced its reliance on the census for current statistical reports on crops and livestock because its own statistical collection activities have improved. The censuses also provide more detailed data than are available from current sample surveys and are useful to the private sector for market research.

The Bureau of the Census examined the results of prior censuses and solicited and reviewed data requests from major Federal and non-Federal users. Through this process, the Bureau

- identified questions that needed to be repeated and
- eliminated unneeded questions as well as those that provided unsatisfactory responses.

Overall, the Bureau made few major changes to its prior questionnaires as a result of its process.



526564/122484

Request for copies of GAO reports should be sent to:

U.S. General Accounting Office  
Document Handling and Information  
Services Facility  
P.O. Box 6015  
Gaithersburg, Md. 20760

Telephone (202) 275-6241

The first five copies of individual reports are free of charge. Additional copies of bound audit reports are \$3.25 each. Additional copies of unbound report (i.e., letter reports) and most other publications are \$1.00 each. There will be a 25% discount on all orders for 100 or more copies mailed to a single address. Sales orders must be prepaid on a cash, check, or money order basis. Check should be made out to the "Superintendent of Documents".



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

INFORMATION MANAGEMENT  
& TECHNOLOGY DIVISION

B-207508

The Honorable Katie Hall  
Chairwoman, Subcommittee on  
Census and Population  
Committee on Post Office  
and Civil Service  
House of Representatives

Dear Madam Chairwoman:

This report responds to your predecessor's August 10, 1982, letter requesting that we review the Bureau's process for determining the content of the agricultural and economic censuses and determine how the data are actually used. We reviewed the process for the 1982 censuses only. We provided your predecessor's staff with the preliminary results of our review in February and March 1983 briefings.

By law (13 U.S.C. §131 and 142), the Secretary of Commerce is required to conduct the economic and agricultural censuses every 5 years. The Census Bureau has been delegated the responsibility to conduct the censuses. The law specifies the general activities to be covered by these censuses: agriculture; manufactures; minerals; and other businesses, including the distributive trades, service establishments, and nonregulated transportation. Censuses have been taken of most of these activities for more than 100 years with the frequency and content of the census varying to reflect the needs of the society.

The following sections provide information on how census data content is determined and used.

HOW DATA CONTENT IS DETERMINED

The Bureau used various practical and reasonable procedures, although not well documented, to identify and satisfy user data needs in the design of the questionnaires for the 1982 censuses. The Bureau did not formally verify the need for the data because the large volume of data and the variety of data users made doing so impractical. Instead, the Bureau relied on its institutional knowledge of the activities to be covered by the censuses and the justifications provided by the data users.

The Bureau attempts to design and develop census questionnaires that will enable it to collect the most accurate and useful data within practical limitations of acceptable respondent burden and cost. In designing the 1982 census questionnaires, the Bureau examined the results of prior censuses and solicited and reviewed data requests. The Bureau identified questions that needed to be repeated to continue the data time series. The Bureau also reviewed prior census results to eliminate questions that elicited an inadequate response, provided data of low dollar significance, or provided data no longer needed.

The Bureau solicited comments from a broad range of data users and providers in determining the data content of the 1982 census questionnaires. It held meetings with Federal agencies; corresponded with Federal and major non-Federal users, such as State agencies; and consulted with its advisory committees. In response to its solicitations, the Bureau received 743 itemized data requests from Federal agencies but rejected 379 of these. The Bureau rejected 141 requests primarily because of anticipated respondent burden and the belief that poor information would be collected. The Bureau rejected other data requests because they were judged insignificant, were costly to include, or duplicated existing data.

Before the questionnaires were sent to the potential respondents, they were subjected to several external reviews. The Office of Management and Budget (OMB), as required by the Paperwork Reduction Act of 1980 (P.L. 96-511), reviewed the 1982 questionnaires to determine whether the data collection activity was justified by program needs, was efficient, and did not overburden respondents. And, as also required by the act, OMB alerted the public about the proposed censuses and solicited comments by inserting notices in the Federal Register. The questionnaires proposed for the economic censuses were submitted on a voluntary basis to a council composed of trade associations and businesses. The council's review was directed towards minimizing Federal paperwork.

Notwithstanding the various procedures to determine data user needs, the Bureau made few major changes from the prior census questionnaires. It requested respondents to the economic censuses to report their inventories at current value regardless of their accounting method. In prior censuses, the respondents were permitted to report their inventories on the basis of their accounting records. Some new product lines were added to the economic censuses. The Bureau deleted a section on foreign ownership of farmland from the agricultural census. That information is now reported to the U.S. Department of Agriculture (USDA). The Bureau also added, deleted, and reformatted questions on the agricultural census.

THE CENSUSES: MANY USERS  
AND MANY USES

Many Government agencies use the census data in many different ways. Our contacts with the major Federal users identified by the Bureau confirmed this. In addition, many non-Federal organizations also use the data. Both the economic and agricultural censuses are useful as historical series to describe changes over time. The censuses, which are generally total counts, provide more detailed data than are available from current sample surveys. The economic censuses are used more often because they cover a broader spectrum of activities and they are more directly integrated in the development of current data.

The economic censuses and related surveys provide an important integrated data base for major Government economic indicators, including the gross national product, the index of industrial production, and the labor productivity indexes. Those economic indicators are adjusted on the basis of the results of the censuses. The censuses also provide a basis for allocating changes among detailed categories reflected in current statistical sample surveys. Also, the Bureau uses the censuses for designing its current economic surveys. In addition, the private sector uses census data for developing marketing strategies.

The agricultural census is used by Federal and State agencies and the private sector for analyzing long-term trends and local area data. The census also provides the only published, consistent county level data. According to Bureau records, the biggest user of census data is USDA's Economic Research Service (ERS). The Service uses much of the census data in its publications on trends and status of farms and farmers. The Service also uses census data to adjust certain economic indicators which it reports. USDA's Statistical Reporting Service (SRS), the provider of most current agricultural information, uses the census data to aid in the allocation of its State level data to counties. SRS's use of census data has diminished over the past several decades because its data collection practices have improved. It has long-range plans for improving USDA county level data. SRS recognizes that carrying out these plans requires a considerable effort and support from USDA management. Also, several other USDA agencies use agricultural census data. State agencies use census data for such purposes as determining trends on farm operator characteristics and for making decisions affecting local land use. The private sector, particularly agribusiness, considers census data in making marketing decisions.

OBJECTIVES, SCOPE, AND  
METHODOLOGY

Our review was performed in accordance with generally accepted government auditing standards. We interviewed Census Bureau, other Department of Commerce, and OMB officials involved in determining or reviewing the content of the census questionnaires. In the absence of written procedures, we generally obtained information on the Census Bureau's process for determining data users needs from interviews. We examined the results and evaluations of prior censuses, records of congressional hearings, the legislation governing the censuses, data requests from users, the Census Bureau's responses to the requests, and the documentation sent to OMB to obtain approval for the questionnaires.

Our examination of the Bureau's evaluation of data requests was hampered by the absence of a control identifying all incoming requests and accounting for their disposition. We therefore generally limited our review to Federal requests for which the Bureau's records were more nearly complete. We also contacted Federal agencies identified by the Census Bureau as major data users to ascertain their use of the data from prior censuses. These agencies included: ERS, SRS, the Bureau of Economic Analysis (BEA), Department of the Interior, and the Bureau of Labor Statistics. We reviewed the results of recent agricultural censuses and compared them to USDA national farm statistics. We also reviewed the business outputs reported in the past several economic censuses. Appendix I contains background information on the censuses and more detailed information on the Census Bureau's procedures in determining the content of the censuses and major uses of the data.

We generally did not review the activities of the data users. We also did not attempt to place a value on their specific use of the data, or to determine the need for the censuses every 5 years. In February 1983, near the completion of our fieldwork, the requester asked that we include in our report any information already obtained on these complex issues. The information in appendix II responds to that request but should not be considered as conclusive. It is included to provide points that could be addressed if the subcommittee decides to continue reviewing the utility of the censuses.


- - - -

In accordance with discussions with your office, we did not obtain formal agency comments on the matters discussed in this report. However, we discussed the report contents with Census Bureau, USDA, and BEA officials, and their comments were included where appropriate. As arranged with your office, unless you announce its contents earlier, we plan no further

B-207508

distribution of this report until 30 days from the date of the report. At that time, we plan to send copies to the Secretary of Commerce; the Director, Census Bureau; the Secretary of Agriculture; the Director, Office of Management and Budget; and other interested parties. We will also make copies available to others upon request.

Sincerely yours,

  
Warren G. Reed  
Director

HOW THE CENSUS BUREAU DETERMINES  
THE DATA CONTENT OF THE AGRICULTURAL  
AND ECONOMIC CENSUSES AND  
HOW FEDERAL AGENCIES USE THE DATA

BACKGROUND

The quinquennial economic and agricultural censuses provide comprehensive statistics on the characteristics of the economic and agricultural sectors of the Nation, States, and local areas. Title 13 of the U.S. Code, sections 131 and 142, require the Secretary of Commerce to conduct the censuses and section 5 authorizes the Secretary to determine the forms and content of questionnaires to be used for surveys and censuses. This authority has been delegated to the Director, Bureau of the Census.

The Bureau directs the economic censuses to individual business establishments engaged in manufacturing, minerals, retail and wholesale trades, service industries, or construction. The census of transportation is a composite of sample surveys on the transportation of commodities, personal travel, and truck inventory and use. The major data collected include the number of establishments, legal form of organization, employment, production hours, payroll and other labor costs, total sales and sales by product line, and value of fixed assets and merchandise inventories. The Bureau publishes data from these censuses at the national and State levels for most items and at lower geographic levels, such as counties, for some information.

The Bureau directs the agricultural census to farm operators. The major data collected include the number of farms, land use, acreage, crop and livestock information, value of products sold, selected production expenses, value of land and buildings, and characteristics of the farm and farm operator. The Bureau generally publishes this data at the national, State, and county levels.

To ease the respondent burden and promote operating efficiencies, the Bureau tailors questionnaire forms to the census respondents and obtains much of the basic economic census data for smaller establishments from administrative records. These actions were particularly encouraged in the planning of the 1982 censuses by the Paperwork Reduction Act of 1980 (P.L. 96-511) and by tight fiscal constraints. For the 1982 economic censuses, the Bureau used 420 forms (300 long forms and 120 short forms) tailored to specific economic activities. For example, the Bureau designed separate short forms for physicians and dentists in lieu of one long form that was used in the prior census to cover both professions. Larger establishments generally received the longer forms which require more data.



For the 1982 agricultural census, the Bureau designed forms for different geographic regions and also used long and short forms. The long forms were sent to the larger farms and a sample of the smaller farms. Overall, the Bureau used 35 census forms in taking the agricultural census for the 50 States.

Respondent burden is significantly minimized in the economic censuses by the Bureau's use of administrative records. About 6.7 million establishments were included in the 1982 economic censuses. Only 2.5 million were sent questionnaires. For the remainder, mainly smaller firms, the Bureau collected the basic data such as sales, payroll, and number of employees from administrative records available from the Internal Revenue Service and the Social Security Administration.

In contrast to the economic censuses, the 1982 agricultural census for the 50 States used questionnaires to collect all data. This was necessary because there are no administrative records available that could provide the data for the census. The Bureau sent questionnaires to an estimated 3.7 million potential farm operators who sold \$1,000 or more of agricultural products during 1982.

The Bureau estimated respondent burden for the 1982 censuses was 4.5 million hours: 2.8 million hours (economic) and 1.7 million hours (agricultural). The individual burden for the economic censuses varies because of the numerous types of forms. The burden ranged from less than a half hour to almost 5 and 3/4 hours. For the agricultural census, the Bureau estimated the farm operator needed about an hour to complete the long form and about half that time to complete the short form.

The Bureau estimates the total cost for the economic censuses at \$63 million and the total cost for the agricultural census at \$57 million. More detailed information about the estimated cost for the censuses was provided in a prior GAO report "Opportunities for Reducing the Cost of the 1982 Agricultural and Economic Censuses" (GGD-82-43, Feb. 10, 1982).<sup>1</sup>

---

<sup>1</sup>Since the release of that report the Bureau made several changes in the censuses because of budget cuts, including the deletion of the area sample survey and other collection activities in the agricultural census. These changes are discussed in appendix II and are reflected in the revised estimated cost of the agricultural census from \$60 million to \$57 million.

THE BUREAU'S PROCESS FOR DETERMINING  
DATA USERS' NEEDS IS REASONABLE

The Bureau used a reasonable, although not well documented, process to determine the questionnaire content for the 1982 quinquennial censuses. It reviewed prior censuses to determine whether to repeat questions in the 1982 censuses for continuing the census data time series. The Bureau solicited the data needs of major census users and reviewed new data requests. In its review the Bureau emphasized the ability of respondents to provide the data. The Bureau does not generally verify the justification for the data requested but evaluates each request on the basis of its staff's expert institutional knowledge of the economic or agricultural activity. Verifying each data request would not be practical for the Bureau because of the large volume of data and the variety of data users. The questionnaires were also submitted for content review to OMB and, for the economic censuses, to the Business Advisory Council on Federal Reports.<sup>2</sup> The total process resulted in few major changes from the prior census questionnaires, hundreds of changes in the specialized industry data area of the economic censuses, and several changes of format in the agricultural census.

Review of prior censuses

The Bureau designed the 1982 questionnaires using its experience from prior censuses. It determined the need to repeat most of the questions from the prior censuses to preserve the continuity of the data series. These questions were needed to obtain basic data such as the name of the respondent, geographic location, size and type of operation, products, and sales. The Bureau reviewed the previously asked residual questions in order to identify and eliminate those that elicited an inadequate response (a response rate insufficient to provide statistically valid results, or responses with apparently inaccurate information), those that provided insignificant information, or those that were no longer needed because the data were available from other sources. For example, the Bureau

--Deleted several questions in the prior census of service industries because of poor response, including the number of tires retreaded and admissions to performing arts programs and to museums.

---

<sup>2</sup>The Council, which consists of trade associations and business representatives, was established to provide an independent review of Federal information collection programs. It is concerned with minimizing Federal paperwork and assuring meaningful reporting programs.

- Combined two questions in the prior census of mineral industries asking for natural gas production separately for oil wells and gas wells because respondents had difficulty reporting the production separately.
- Deleted a question on copper oxide from the census of manufactures because the volume of receipts in 1977 for this item was below the Bureau's significance criteria of \$10 million for the censuses of manufactures and mineral industries.
- Deleted questions on foreign ownership of farms from the agricultural census because these data are now reported to USDA.

The Bureau also used its experience from prior censuses to evaluate new data requests. (See p. 6.)

The Bureau requested comments  
to help determine questionnaire  
content

The Bureau requested comments from a wide range of data users and providers in determining the data content of the 1982 census questionnaires. It held meetings with Federal agencies, corresponded with Federal and major non-Federal users, and consulted with its advisory committees. As a result of these efforts, the Bureau received many suggestions and data requests which it reviewed using reasonable data collection criteria.

At the Census Bureau's request, the Office of Federal Statistical Policy and Standards, Department of Commerce,<sup>3</sup> convened two meetings of Federal agencies in early 1980 to discuss the 1982 censuses. In February, 25 agencies attended the meeting on the economic censuses and in March, 10 agencies attended the meeting on the agricultural census. At these meetings the Census Bureau advised agencies about its schedule and process for taking the censuses. Subsequent meetings were held with individual agencies and groups of agencies to discuss their needs. As a result, the Bureau received 68 responses from Federal agencies, such as the Bureau of Economic Analysis (BEA); the Bureau of Labor Statistics (BLS); the Environmental Protection Agency; and agencies of the Departments of Agriculture, Interior, Energy, and Transportation. These agencies provided 743 itemized data requests. Most of the requests, about 648,

---

<sup>3</sup>This office's functions were transferred to the Office of Information and Regulatory Affairs, OMB, effective August 23, 1981.

were directed towards the 420 forms used in the economic censuses and the remaining 95 related to changes in the 35 agricultural census questionnaires. The requests ranged from asking for a separate line item of business, such as taxis, to adding a line item such as department store sales of antiques. Almost 90 percent of the requests were for new line items.

The Bureau also solicited the comments of private sector users of both censuses, major data providers for the economic censuses, and State departments of agriculture and land grant universities for the agricultural census. The Bureau sent about 3,700 copies of its proposed questionnaires for the 1982 economic censuses to trade associations and large companies. The Bureau asked these organizations to comment on whether the proposed questionnaires would create any reporting problems and to determine if they had any new data requests.

The Bureau sent State departments of agriculture and land grant universities a copy of the 1978 census questionnaire as a basis for them to comment on the 1982 census. Those who wished to make new data requests were asked to describe how the data would be used. Other non-Federal users learned about the Bureau's data content process for the agricultural census through data user conferences and the Census Advisory Committee on Agricultural Statistics which meets semi-annually with Bureau officials. The private users wrote directly to the Bureau to identify their data requests.

The Bureau's records were incomplete and did not document all actions on the requests. This was particularly the case for the non-Federal requests. To satisfy our objectives established by the subcommittee and restrict our review to a manageable level, we concentrated our efforts on the actions taken by the Bureau on Federal requests.

The Bureau's overriding concern in evaluating requests was minimizing respondent burden. In addition it considered the likelihood of obtaining a satisfactory response, the appropriateness of the question for a census, the limitation of space on the questionnaire form, and funding constraints. The Bureau discouraged the use of the census to obtain national or State level data because it believed such data would be more appropriately collected in sample surveys. The Bureau's evaluation process was not readily definable because of an absence of manuals and instructions. Rather, Bureau personnel made their evaluations on the basis of results of prior censuses and surveys and their collective knowledge. Overall the Bureau rejected 379 of the 743 Federal requests: 315 of the 648 requests for the economic censuses, and 64 of the 95 requests for the agricultural census.

The Bureau did not add questions where experience or institutional knowledge indicated that potential respondents would either not respond or would respond inaccurately. This was the reason for many rejections of new data requests from Federal agencies--approximately 37 percent of the 315 rejected data requests for the economic censuses and 39 percent of the 64 rejected data requests for the agricultural census. For example, the Bureau rejected a request on production expenses in the 1982 Census of Agriculture. The Census Bureau had asked that question in its 1974 Census of Agriculture and had obtained a poor response rate. A Bureau analysis of 10 States showed that only 65 percent of the respondents replied to the question, and this response rate was not statistically acceptable to the Bureau.

The second most frequent reason for denying new data requests was the insignificance of the data requested. This was particularly the case for the economic censuses, where insignificance was the reason for the rejection of about 24 percent of the 315 rejected data requests. The Bureau established dollar limits to determine significance for five of the economic censuses. Requests for data on product line and materials were accepted in the censuses of manufactures and minerals if the expected value exceeded \$30 million, and for retail, wholesale, and service industries censuses if the value was at least 5 percent of total sales of that type of establishment. For example, in the census of retail trade, the Bureau rejected adding product lines for motorcycles, coins, stamps, antiques, and collectibles to the department store questionnaire and luggage and leather goods to the florist shop questionnaire. The Bureau also considered significance when reviewing new data items for the agricultural census, but it did not quantify the criteria.

The other criteria or considerations, although not prominent, were important in the Bureau's evaluation of new data requests. These included data required only at the national and State level, which could be obtained through sample surveys; a lack of funds; and duplication of data already available. For example, the Bureau rejected requests to include questions on the sales of some farm commodities because these data are used only at the national level; requests for information on separate business lines for taxis or for an additional questionnaire form for real estate, because these requests would require additional money; and requests for information on tips, because the Internal Revenue Service already collects that data.

The Bureau also tested the 1982 agricultural census questionnaire on about 4,000 farms to evaluate proposed new questions and formats. Not all questions tested were used in the actual census.

The Bureau did make some exceptions to its review criteria. It attempted to accommodate certain data requests of the private sector to encourage respondent cooperation. One example of such an accommodation was the Bureau's decision to include a question on the type of personnel employed in physicians' offices and their pay because seven associations representing physicians wanted this information.

#### Outside content review

Before the questionnaires were sent to the potential respondents, they were subjected to several external reviews. Two reviews were required by law, and one was voluntary. The Paperwork Reduction Act required the proposed questionnaires to be submitted to OMB to obtain its approval. Also, the act requires the public to be notified of planned data collections. The economic censuses questionnaires were submitted voluntarily to the Business Advisory Council on Federal Reports. No significant changes resulted from these reviews.

The OMB review satisfied the objectives of the act that data collections are justified for program needs, are efficient, and do not overburden the respondent. For OMB's review, the Bureau submitted a copy of the questionnaires, accompanying instructions, the legal authority for the data collection, cost of the censuses, estimates of the response burden, a description of the plan for collecting the data, time schedules, justifications for collecting the data, and a list of data users that were contacted in the design of the questionnaires. OMB reviewers referred to respondent complaints, subjective OMB guidelines, and their knowledge of Federal statistics to evaluate burden. The Paperwork Reduction Act of 1980 mandated the creation of a Federal Information Locator System to improve the efficiency of data collection and use and to help eliminate duplicate collections, but the system is not yet fully operational.<sup>4</sup> The reviewers therefore relied on their knowledge of Federal information in checking for possible data collection duplication. OMB's review did not result in any substantial changes in the content of the censuses. The OMB official responsible for reviewing the censuses advised us that changes were recommended to make instructions on the forms more understandable. She said the Bureau made the changes.

To formally alert the public about the proposed censuses and solicit comment, OMB published notices in the Federal

---

<sup>4</sup>For more details on this subject see "The Office of Management and Budget's Efforts to Develop and Augment the Federal Information Locator System Have Not Met Congressional Expectations" (GAO/GGD-82-76, June 17, 1982.)

Register in 1981 and early 1982. The notices, required by the Paperwork Reduction Act of 1980, identify the purpose of the data collection efforts, the estimated burden, and agency officials to contact for additional information. A separate notice was published for each census.

The Census Bureau also sent the proposed economic census questionnaires for review to the Business Advisory Council on Federal Reports. The Council sent the census forms to its member associations for review and comment. The Council's Executive Director said the associations had no comments.

The review process resulted  
in few major changes

Overall the Bureau made few major changes to the prior census questionnaires. It did add a number of items to the censuses and revise the format for some questions. The only major change to the general questions common to all economic censuses was the requirement of respondents to report their inventories at current value regardless of their accounting method. In prior censuses respondents were permitted to report their inventories on the basis of their accounting records. A number of product lines were added to the economic censuses. For example, the Bureau added merchandise sales questions on pet foods, soaps, detergents, polishes, and paper products on the food store questionnaire for the census of retail trade, and separate questions on new and used office furniture to the furnishings dealers questionnaire in the census of wholesale trade.

Because of the good response to the prior agricultural census, the Bureau decided not to change the questionnaire's format or size. This limited the number of new questions that could be added to the questionnaire. The few basic changes to the forms included deleting the section on foreign ownership of farmland (these data are now reported to USDA) and dividing one section on type of organization into two parts with the detailed questions on type of corporation having its own section. The crop sections were regionalized so respondents would see only those crops commonly grown in their area of the county. Furthermore, a new question on interest expense was added to the long form. However, the Bureau did make numerous other minor changes, such as deleting single questions or reformatting existing questions. For example, the Bureau deleted one question each on animal health costs and mink breeding. In reformatting, the Bureau removed a series of questions on gallons purchased for such fuels as gasoline and oil. Other reformatting included deleting questions on agriculture chemicals for sanitation and insect control and dividing the value of a group of major grains sold into its component individual grains.

ECONOMIC AND AGRICULTURAL  
CENSUSES ARE BOTH USEFUL

Both censuses are used to describe the changes over time in the structure of economic activities. The economic censuses cover larger and more diverse economic activities and are more directly integrated in the development of current survey data. The economic censuses are crucial in developing estimates of the quantity and composition of the Nation's output of goods and services. The agricultural census covers a smaller but important economic sector. Both censuses provide more detailed information than is available from current sample surveys. The economic censuses provide detailed product line data not available from surveys, and the agricultural census provides comprehensive county level data not available from USDA surveys.

Economic census data and current  
statistics are essential for major  
economic indicators

The Census Bureau's economic censuses and related current (annual and more frequent) economic statistics provide an important integrated data base for major economic indicators prepared by the Government.<sup>5</sup> Those indicators, such as the gross national product (GNP) and the index of industrial production, rely on the censuses for benchmark<sup>6</sup> estimates and to provide weights for distributing the results of current surveys to various detailed industry groupings.

Studies showing the production and use of commodities among industries, known as input-output tables, are developed using the detailed data provided by the economic censuses. The tables are prepared by BEA. They are prepared by tracing how each of the economy's industries use the products of all industries in producing final products for consumption. The economic censuses provide the required data to estimate each industry's product

---

<sup>5</sup>According to the Census Bureau, the private sector uses economic census data for such purposes as evaluating market potentials, defining sales or distribution territories, and determining where to locate new facilities.

<sup>6</sup>The term "benchmark" refers to the substantially complete counts of an activity that the censuses provide. Starting from these counts, an analyst using sampling or estimating procedures may make projections into the future or prepare estimates for dates between censuses. Thus, the census data provide a reference point from which estimates can be made in a timely manner using sample survey data. Previously developed estimates may be adjusted on the basis of census data.



outputs and materials, supplies, and energy inputs. The input-output tables are for all practical purposes dependent on the economic census data.

The input-output tables use data from all the economic censuses. The manufacturing and mining industries comprise about 70 percent of the commodity classes covered by the tables. Although the input-output tables use data from other sources, BEA prepares the detailed tables only for economic census years.

BEA further uses data from the economic censuses and the input-output tables to derive benchmark estimates of the national income and product accounts. The accounts include estimates of the GNP. Agricultural census data are also used in the benchmarking process, but the agricultural sector accounts for a small portion (6 percent) of the GNP. The GNP measures the Nation's final output of goods and services either as the sum of final products plus inventories or as the sum of incomes generated by production.<sup>7</sup>

Since no other data provide the detail and accuracy of the economic censuses, the GNP estimates, benchmarked to the censuses, are the most complete and accurate. In developing the GNP benchmark estimates, BEA uses all the major data items collected and published in the censuses. The benchmarked estimates provide weights used to distribute changes in output among industry for current estimates of the GNP. The Census Bureau's current economic surveys are used in preparing the current GNP estimates.

Economic census data are used in compiling the producer price index. The index is compiled by BLS and measures changes in prices received by producers for goods sold. Price data for 3,450 products are combined into indexes for 493 groups. The product prices are combined by weights based on the censuses' distribution of shipments. The weights are revised every 5 years when data from the censuses become available, and are adjusted annually using the Census Bureau's annual manufactures survey data.

BLS' productivity indexes also rely on data from the Census Bureau's economic censuses. BLS computes productivity as output per employee input to show the relationship between industries'

---

<sup>7</sup>Further background information and analysis of the GNP estimates can be found in previously issued GAO reports, "A Primer on Gross National Product Concepts and Issues" (GGD-81-47, Apr. 8, 1981) and "The Bureau of Economic Analysis Should Lead Efforts to Improve GNP Estimates" (GAO/GGD-83-1, Dec. 27, 1982).

production and the worker hours expended. The economic census data are used to prepare benchmark measures of productivity for census years and to provide weights for estimates of industry productivity for noncensus years. The censuses provide data on the value of shipments of primary industry products that are used to compute labor productivity for census years for 104 manufacturing, mineral, retail and wholesale trades, and service industries.

The industrial production index and 235 component industry production indexes compiled by the Federal Reserve Board use economic census data. The industrial production index and the component indexes are benchmarked to the censuses of manufactures and minerals. Those censuses also provide weights used to incorporate current changes in the industrial production index. The current changes are based on Census Bureau monthly and annual surveys.

The censuses collect data on establishments that serve as the core of the Bureau's industrial directory. The Bureau uses the directory as the universe of business establishments to select samples for its current surveys. The directory is updated each time the censuses are taken. The survey samples take into account the value of sales and shipments by detailed product line and also geographic business patterns measured by the censuses.

The economic censuses also provide benchmarks and weights for the current surveys such as the surveys of monthly retail trade and manufacturers' monthly shipments, inventories, and orders. The censuses provide universe totals that are applied to raise the sample survey estimates to the census benchmark. The census data are also used as weights to distribute changes measured by the less detailed current surveys to the detailed product group distribution measured by the censuses.

#### Agricultural census data useful for long-term evaluations

Agricultural census data are used by those Federal and State agencies and private sector concerns that need to analyze the changes in agriculture over time. The census is appropriate for this purpose because the data published provide the only comprehensive detailed set of statistics on agriculture at the county level. The data provide more detailed information on crops, land usage, and the characteristics of farm operators than available from USDA current surveys. The comprehensive data allow for the possibility of numerous important cross-tabulations by size of farm, type of farm, and characteristics of the farm operator. However, agricultural census data are

generally not integrated with current statistical reports on farm commodities. This matter is discussed in appendix II.

According to Bureau records, ERS is the Government's major user of agricultural census data. ERS conducts economic research and analysis relating to agricultural production, marketing, and distribution. Some ERS products which use census data follow:

- Analyses of the farm sector are prepared using mathematical models for individual farms and farming at the regional, State, and national levels. These models demonstrate the impacts created by certain policies under various economic conditions. Variables include types of farming, regional shifts in agricultural production, the economic well-being of various types of farms, and the types of farm ownership.
- An annual report on the status of the family farm is published as required by law. The report addresses trends in agriculture, factors affecting the structure of farming, marketing approaches, the impact of government programs, the economic well-being of farms, change in agriculture, and performance of the agricultural sector.
- "Economic Indicators of the Farm Sector," which ERS considers a data base on farm economics, is published annually. Examples of the indicators are: cash receipts, production expenses, farm debt, farm income, and assets.

Other USDA agencies also use agricultural census data. For example, the Agricultural Stabilization and Conservation Service (ASCS) uses census data to estimate the impact of proposed programs on the production of certain crops and to provide a farm production data base to the Federal Emergency Management Administration. That agency uses the information in estimating the damage to the nation's food system that would occur in the event of nuclear attack. ASCS needs data on all crops grown, and characteristics of the farms that produce these crops, to make its impact estimates. Data collected by ASCS and other USDA agencies are not detailed enough for this purpose. SRS, the primary statistical agency of USDA, annually uses census data to assist in the allocation of some USDA State level data to counties. However, it generally does not use census data to benchmark the results of its several hundred current surveys on farm commodities.

BEA directly and indirectly uses census data. USDA provides data measuring farm sector activities at the national and State levels for use in BEA's national income and product accounts and interindustry accounts. USDA benchmarks such data to census data when they become available. BEA considers census

data for county estimates in its regional economic accounts such as farm proprietors' income which is used in formulas distributing Federal funds.

The Bureau of Land Management, Department of the Interior, uses agricultural census data in developing 7-year land use plans as required by the Federal Land Planning and Management Act of 1976. These plans form the basis for the Bureau's operations. Also, the Bureau is required to prepare about 100 environmental impact statements for range lands in the western United States. Because most Bureau work requires consistent county level data on farm acreage, value of crops sold, land use, land irrigated, and cattle and calves, the agricultural census is the only reliable source.

The Bureau of Reclamation, Department of the Interior, uses agricultural census data in planning and evaluating programs and projects and in preparing cost benefit analyses of proposed irrigation projects. Because such projects are usually local in nature, the Bureau needs consistent county level data on crops, value of crops sold, land irrigated, farm operator characteristics, and energy expenses. The Bureau depends on the agricultural census as the only source of such data.

The census data are also used by States and the private sector. State agencies, including departments of agriculture and land grant universities, use the census data for such purposes as determining trends on farm operator characteristics and in the use of commercial fertilizers. The agencies also use the data for making decisions on land use controls, zoning, and land preservation measures and for evaluating the distribution of agricultural production by county. According to the Bureau, the private sector, especially agricultural cooperatives and agribusinesses, such as manufacturers of farm equipment, use census data in marketing efforts.

ADDITIONAL INFORMATION ON THE NEED AND FREQUENCY OF  
THE ECONOMIC AND AGRICULTURAL CENSUSES

Appendix I showed that the Census Bureau has a reasonable process for determining the content of the quinquennial economic and agricultural censuses and that the data collected are being used. At the request of the former subcommittee Chairman, appendix II includes information that we had gathered about Federal uses of the censuses but had not developed to a conclusion concerning the value of the uses and the need to conduct the censuses every 5 years. These questions would be appropriate to pursue in a more intensive evaluation of the censuses than our study. Because the information is incomplete, its primary value is as an indicator of the usefulness of further evaluation of the censuses.

ECONOMIC CENSUSES

We have no basis for questioning the need for the economic censuses, but their frequency and content could be subject to further inquiry. As discussed in appendix I, their importance is well defined. Major Federal users believe that the censuses are needed every 5 years. However, an analysis to support this belief would require a significant level of effort.

The value of the economic censuses, although not conclusive, is well established. No other Government agency collects similar data on economic activity on a scale that compares to the Census Bureau's economic statistics programs. Besides the economic censuses, the Bureau collects annual and even more current data on some economic activities. Those data complement, rather than substitute for, the economic censuses. In recent times, little has been done to change, postpone, or cancel the economic censuses. The Census Bureau decided in 1981 that rather than jeopardize the quality of the six establishment censuses, it would totally eliminate other programs. Census Bureau, BEA, and BLS officials, who are responsible for data series that use economic census data, believe that the censuses are needed every 5 years because of rapid change in the economy.

Other information, however, suggests that the economic censuses may not be needed every 5 years. After completing the 1963 input-output study, BEA decided to delay preparing the 1963 GNP benchmark estimates because the study showed that changes in the economy were not large enough to necessitate preparing the benchmark estimates. BEA eventually prepared the 1963 GNP benchmark estimates along with the 1967 benchmark estimates. The 1967 and 1972 estimates were prepared on schedule following completion of the censuses and of the input-output studies for those years. Our preliminary analysis of economic census data

for the years 1963, 1967, 1972, and 1977 showed that the distribution of business output recorded by the censuses for the later years was not radically different from the distribution recorded by the 1963 census. We did not, however, compare the input-output studies for those years, which could show more significant changes at greater levels of detail.

The last assessment of the economic censuses' frequency was made nearly 30 years ago in 1954 by the Intensive Review Committee. The committee, consisting of professionals from business and nongovernment organizations, was formed by the Secretary of Commerce to review the Census Bureau's programs. At the time, Commerce was having difficulty obtaining funding for the Bureau's authorized programs. The committee's aim was to learn how well the Bureau's programs had been carried out, what uses they had served, and what changes and improvements were needed to bring the programs in line with society's needs.

In its report, "Appraisal of Census Programs: Report of the Intensive Review Committee to the Secretary of Commerce," the committee recommended that complete censuses of manufactures, trades, and services be done every 5 years. The committee believed that the census of manufactures was the foundation of the Bureau's industry statistics program and noted that estimates of the GNP could never have been constructed without the censuses. The committee also recommended that a census of mineral industries be taken every 10 years, supplemented by a sample census at the midpoint between censuses,<sup>1</sup> and that the need for a transportation census be further explored before any funds for it were authorized. The committee's report did not address the need for a census of construction.

Since the committee's assessment, generally all of the censuses have been taken every 5 years. To evaluate whether this frequency is appropriate for all censuses, a study could be made to determine what acceptable alternative data are available and a detailed analysis could be made of the product line changes and their significance. Such an analysis would require a significant level of effort because of the numerous products covered by the censuses. There are, for example, about 13,000 products in the census of manufactures.

#### AGRICULTURAL CENSUS

Questions can be raised about the need and efficiency of two Federal agencies having large-scale agricultural statistical activities. Since the late 1920's, USDA, the primary Federal

---

<sup>1</sup>Currently the Census Bureau only conducts the 5 year census of minerals.

user of agricultural census data, has reduced its reliance on the census for current statistical reports because of SRS' improved statistical collection activities. In addition, other USDA agencies use considerable resources to collect agricultural statistics. However, recent attempts to postpone, cancel, or significantly change the census have not succeeded.

#### USDA'S reduced reliance on the census

USDA's improved efforts to gather statistical data have reduced its dependence on the agricultural census for current statistical reports on crops and livestock. In 1928, the Secretary of Agriculture believed the agricultural census was vital to USDA and the Nation. He stated that the census constituted the basis for an adequate USDA system of annual statistics and monthly crop and livestock estimates. In order to minimize the error of the estimates, it was necessary to check them every 5 years to an actual enumeration, using the census as a benchmark. Otherwise the errors in estimating crop acreage or the number of livestock would be carried forward and exaggerated in the annual estimates, resulting in a cumulative percentage of error.

In the late 1920's, USDA's sampling was not sophisticated. Its statistical methods did not include probability sampling,<sup>2</sup> and therefore precise estimates could not be made. Since the early 1960's, USDA's use of probability sampling has grown to a point where it provides reasonably precise national and State commodity, price, and labor estimates in about 300 reports on 165 crop and livestock products. USDA estimates its statistical sampling errors are approximately 2 percent at the national level and 5 to 10 percent at the State level for major commodities. Our analysis of recent national agricultural data showed that the USDA and census statistics are comparable for such items as the number of farms, land in farms, and the value of major products. The Census Bureau testified at a 1984 appropriations hearing that USDA's estimate of the number of farms should be about the same as the Bureau's count.

In 1976 and 1983, USDA officials pointed out that the agency does not use census data to the extent it once did. In 1976, the Administrator, SRS, testified before the House Subcommittee on Census and Population, Committee on Post Office and Civil Service, on proposals to revise the census. He said that

---

<sup>2</sup>Probability sampling is a statistical technique which provides for the selection of a sample where every unit in the universe has a known probability of being chosen so that the results can be used to develop estimates for the universe with accompanying measures of reliability.

census data were useful in establishing county estimates, which SRS' current surveys did not cover in sufficient detail. But he commented that the historical function of census data serving as a benchmark for State and national estimates of SRS' current agricultural statistics program was no longer needed or useful. He believed that using sample surveys to take the agricultural census would permit greater control in data collecting and processing that would, in turn, improve the quality and timeliness of the statistics. The Administrator stated that a properly designed sample survey could provide more reliable data than those from a census. In 1983, the Director, Estimates Division, SRS, advised us that SRS generally does not benchmark the data from its current surveys to census data, but it does use census data to assist in making county estimates from USDA State data which are used by ASCS and the Federal Crop Insurance Corporation programs as well as by other data users.

USDA does not benefit from the major efforts the Bureau expends every 5 years in developing its census mail list. USDA is not permitted to use the Bureau's mail list because of legal restrictions on the sharing of data obtained in part from Internal Revenue Service records. USDA conducts its surveys by developing its own mail lists and land area samples.

USDA currently uses more resources in statistical activities than the Census Bureau does for the agricultural census. According to OMB, USDA's annual projected obligations for principal statistical programs will average about \$224 million in the 3-year period ending in fiscal year 1984. Two USDA agencies, SRS and ERS, primarily responsible for collecting and analyzing general agricultural statistics, will have combined annual obligations for principal statistical programs averaging about \$88.5 million in the same period. In addition to SRS and ERS, several USDA agencies also collect data for their program needs. For example, the Soil Conservation Service conducts extensive surveys to classify and map the country's soil resources to aid conservation and land use decisions and will obligate about \$77 million for principal statistical programs in fiscal year 1984.

USDA agencies deploy extensive field organizations to carry out their missions. For example, SRS services all the States and maintains 44 offices employing about 790 employees, and the Soil Conservation Service has a field force in about 2,900 offices covering all counties. ASCS uses about 8,000 local agents working in county operated agricultural stabilization and conservation service offices in nearly every county.

SRS has begun long-range planning activities for its future role in providing agricultural statistics. The Administrator, SRS, formed a long-range planning group which developed a report in March 1983 providing the framework for SRS' long-range plan.



Of particular interest to this discussion is the planning group's proposal for a major USDA initiative to improve county estimates. SRS recognized that carrying out these plans would require a considerable effort and support from USDA management. This proposal includes the use of data already available in USDA county offices to complement survey data in producing county estimates. A lack of quality county estimates is a major limitation in USDA's current statistical data.

Proposals and attempts  
to change, postpone, or cancel  
the agricultural census

Various proposals and attempts to significantly change, postpone, or cancel the census over the past 30 years and particularly within the last decade have not succeeded. The 1954 Intensive Review Committee concluded that a 10-year period between agricultural censuses, supplemented by annual sampling operations, would have several advantages over quinquennial censuses. More kinds of data would be provided on a more timely basis and \$7 to \$8 million could be saved. Also, the Bureau's workload and costs would be more uniformly spread over a decade. The committee recommended that, beginning with the decade of the 1960's, the Bureau should take a full census in 1960. Thereafter, large sampling operations would be taken for crop years ending in 1, 3, 5, and 7 and smaller sampling operations would be taken for crop years ending in 0, 2, 4, 6, and 8. The next census would occur in 1970 and cover crop year 1969. The committee made these recommendations prior to USDA's major improvements in its statistical activities.

Several proposals for census revisions were considered during the past decade. In 1973, the administration attempted to postpone the 1974 agricultural census to 1977; legislative proposals were introduced in the 94th (1976) and 95th (1977) sessions of Congress to change the census to a sample survey and transfer it from the Census Bureau to USDA; in 1981 the Bureau planned to cancel the 1982 census; and, finally, the Bureau altered the 1982 census and eliminated related, subsequent surveys.

The Bureau, through the Department of Commerce, submitted to the Congress an administration legislative initiative which proposed to defer the 1974 census until 1977 when it would be taken as part of the economic censuses. In place of the 1974 census, the Bureau suggested a sample survey which, according to the Bureau's Deputy Director at that time, would provide reliable data at the State and national level. This survey was estimated to cost about \$8 million, instead of \$28 million, which was the cost of a full census including reliable county

level data. Although hampered by delayed planning, the Bureau did conduct a 1974 census of agriculture.

The House Subcommittee on Census and Population held hearings to consider legislation in the 94th and 95th sessions of Congress to transfer the agricultural census from the Census Bureau to USDA and to collect census data on a sample basis wherever possible because of the criticism of the census. Witnesses who testified at the hearings complained about the burden imposed by the 1969 and 1974 censuses. Also, census critics felt that it duplicated existing data, that the financial inquiries were unnecessary and an invasion of privacy, that the accuracy and usefulness of census data were questionable, and that data published 2 to 3 years after collection were of little value in farmers' decisionmaking. Several Congressmen specifically complained about the late release of census data. County level data from the 1974 census were available in June 1976 for only a very few counties. USDA was also critical of the census--the questionnaire was too comprehensive, the quality of recent censuses had declined because of undercounting of crops and cattle, and publishing was apparently given low priority. USDA believed a properly designed sample survey could provide more reliable data than those produced in a census. The Census Bureau did conduct its planned 1978 census.

In 1981, the Bureau planned to cancel the 1982 agricultural census because of anticipated budget cuts for fiscal year 1982. Because of the severity of the budget cuts, the Bureau decided to cut entire programs, rather than reduce the quality of all data produced. In identifying possible targets, the Bureau believed that funds taken from the 1980 decennial census program would reduce data quality, the computer area could not prudently be reduced, further reductions in the current statistical program area would damage data credibility, and reducing or deleting the economic censuses would have an adverse effect on many key data series using the results as benchmarks. Thus, the Bureau opted to defer the census of agriculture until 1987, making it a 10-year rather than a 5-year census. Funds for the 1982 agricultural census were restored but were not sufficient to incorporate all features of the prior census.

Consequently, the Bureau eliminated certain data collection activities planned as part of the 1982 census--the area sample survey and the follow-on sample survey program. The Bureau first included the area sample survey in the 1978 agricultural census to improve the coverage at the State and national levels. The sample required census enumerators to canvass randomly selected geographic areas with rural characteristics and complete census questionnaires on each respondent contacted. The area sample survey was intended to prevent the loss of data on many smaller farmers. The area sample survey provided data for

221,000 farms, or about 9 percent of the total number of farms in the 1978 census, but these farms accounted for only 1 percent of the farmland and sales. The Bureau expects, as a result of the area sample survey's deletion, to miss at least 10 percent of the farms at the national level and as many as 20 percent from some States in the 1982 census.

The Farm Finance Survey was one of the follow-on sample surveys conducted as an integral part of the 1978 census. Some users of agricultural data rely heavily on it. To prepare its reports on the farm economy, ERS directly uses the data provided from the survey on non-real estate debt and indirectly uses various data to benchmark balance sheet statistics. The Farm Credit Administration uses survey data to determine farmers' debt, particularly on loans made by nonbanking sources. USDA considered it important enough to provide the Bureau with partial funding for the 1979 survey. The Bureau also planned to conduct a census of agricultural services. That census would have collected data on businesses providing services for a fee, including veterinary practice, landscaping, and crop harvesting. These data are useful to BEA in the development of the national income and product accounts. Both statistical collection activities were eliminated by an amendment to the Bureau's appropriations bill, primarily because of respondent burden. Budgetary constraints also had a bearing on the elimination of these statistical activities and other possible follow-on surveys.

26151

**AN EQUAL OPPORTUNITY EMPLOYER**

UNITED STATES  
GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID  
U. S. GENERAL ACCOUNTING OFFICE



**THIRD CLASS**

GE