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Management Improvements Essential for Key
Automated Systems at the Agricultural
Stabilization and Conservation Service

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Justice, and Agriculture,
Committee on Government Operations
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Mr. Chairman and Members of the Subcommittee:

I appreciate this opportunity to testify on the Agricultural Stabilization and Conservation Service's (ASCS) management of two information resources management projects and its pending procurement request for upgrades to minicomputers in ASCS county offices nationwide.

At your request, we examined escalating costs and schedule delays for ASCS' Grain Inventory Management System (GIMS) and Processed Commodity Inventory Management System (PCIMS). In addition, we evaluated how ASCS monitors and manages disk capacity to determine equipment upgrades necessary for its approximately 2,800 county offices. Our report, delivered to you on September 12, provides further details of our work.

As the Subcommittee is aware, ASCS administers farm commodity, conservation, and emergency assistance programs, including commodity loans and price support payments to farmers. To support this mission, ASCS has automated the acquisition, storage, movement, sale, and donation of grain and processed commodities inventories worth over $4 billion. ASCS also has equipped its county offices with minicomputers to help process commodity loans, pay price supports, and enroll farmers in conservation programs. ASCS' program and administrative costs associated with these functions in 1989 was some $13 billion. The GIMS, PCIMS, and network of county office minicomputers are critical to ASCS' efforts to provide effective information resources management.

ASCS' effort at designing and implementing GIMS and PCIMS has been fraught with problems contributing to serious cost overruns and significant system implementation delays. ASCS awarded a contract in 1983 to develop the two major automated inventory systems at a combined cost of about $7 million. Current cost estimates for these systems amount to approximately $62 million, which is almost

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9 times the initial estimate. One system was installed 2 years later than planned, and the other is scheduled to be installed in July 1991, which would be almost a 6-year delay.

ASCS has also drafted a request for about a $57-million increase in procurement authority, primarily to purchase additional minicomputer disk drives and computer equipment for county offices between July 1990 and September 1992. Our analysis, however, identified flaws in the method ASCS uses to justify these purchases. As a result, we question whether ASCS' request for this $57 million increase is justified.

ASCS INVENTORY MANAGEMENT SYSTEMS: INADEQUATE PROJECT MANAGEMENT

Our review of GIMS and PCIMS raises concerns about ASCS' management of information systems development and enhancement projects. GIMS and PCIMS support an important ASCS responsibility involving the management of large commodity inventories worth billions of dollars. Poor planning, insufficient requirements analyses, and faulty contract management have kept ASCS from finishing the systems on time, staying within original cost estimates, and meeting important user needs.

To illustrate, our review found that ASCS (1) did not involve key users in initially defining systems requirements, (2) did not thoroughly review the contractor's system design document before accepting it, and (3) failed to control user proposed system modifications after contractor work began. Moreover, the PCIMS project has suffered from inconsistent direction from ASCS' top management. In the last seven years, six people have served as the Deputy Administrator for Management, the ASCS official responsible for the project. This lack of continuity has contributed to decisions to start, stop, and restart the project which has resulted in additional costs.

Some factors outside ASCS' control also contributed to the difficulty in developing the two systems. Legislation such as the Food Security Act of 1985 changed GIMS' requirements after ASCS accepted the system design. Similarly, legislative requirements such as those coming from the Prompt Payment Act and other agricultural policy changes, including commodity packaging and shipping period initiatives, affected PCIMS requirements after design acceptance. However, ASCS records and our discussions with project management officials indicate that these legislative and policy changes were not the principal causes in the two systems' cost growth and schedule delays. According to ASCS records, at most about $7 million of the nearly $55 million in contract cost growth for both systems was due to these new requirements.

Problems Remain With GIMS and PCIMS Despite Significant Investment

Although installed, GIMS does not meet some important inventory managers' needs that were deleted in 1985 to conserve contract funds. In order to generate needed management information reports, users key in some of the same data residing in GIMS into personal computer-based systems. ASCS is also using in-house resources and another contractor to enhance GIMS to satisfy user needs that were not met when the system was implemented in 1987. Through June 1990, the agency incurred about $5 million in direct costs for in-house programmer staff and had obligated about $1 million in funds for the other contractor to continue developing and modifying GIMS.

PCIMS, expected to be fully operational in July 1991, will be used not only by ASCS, but also by USDA's Food and Nutrition Service and Agricultural Marketing Service. However, the three agencies have not established an effective means to resolve disagreements that may arise during PCIMS acceptance testing, installation, and maintenance. In addition, an agreement among the agencies establishing a structured software maintenance policy has not been finalized. The absence of an effective interagency management

structure to guide project direction, control, and oversight poses
substantial risk to the successful implementation, operation, and
maintenance of PCIMS.

ASCS MINICOMPUTERS: INEFFICIENT
DISK USAGE AFFECTING PROJECTED NEEDS

In May 1990, ASCS planned to request the General Services
Administration's approval of about $258 million in additional
procurement authority through December 1996. ASCS has not formally
submitted the request for approval and is presently revising it.
This procurement authority is mainly for more minicomputer disk
drives and equipment upgrades at its county offices. The May 1990
draft procurement request indicated that the agency needed an
additional $57 million in procurement authority for minicomputer
equipment upgrades, maintenance, and software between July 1990 and
September 1992.

To determine whether these additional purchases are justified, we
examined ASCS' procedures used to manage disk capacity for its
county office minicomputers. According to ASCS, most county
offices do not have staff with highly technical computer skills.
Thus, ASCS uses its Kansas City Management Office (KCMO) to
centrally manage ADP support for its approximately 2,800 county
offices, including procuring, writing, testing, and installing
computer software and related equipment.

KCMO manages disk capacity at the county offices by periodically
monitoring directories listing all computer programs and data files
stored on the offices' disks. KCMO identifies files for deletion,
and recommends that the counties purge certain files and off-load
others to floppy diskettes or computer tape to help ensure
efficient disk usage. If a county's disk utilization exceeds 70
percent of its available disk space after files identified for

deletion or alternative storage have been removed, the Management Office will purchase an additional disk storage upgrade.

We examined file directories for the minicomputer disks in each ASCS county office (as of June 1990) to determine how efficiently disk space was being used. On average, we found that about 12 percent of county office' disk capacity is wasted to maintain unnecessary files--files that should be deleted or offloaded to other storage devices (such as floppy diskettes or computer tape). On a county-by-county basis, we found that as little as 2 percent and as much as 36 percent of the disk space used was occupied by files identified for deletion or backup storage on an alternative medium. Clearly, the existing disk capacity management process is not resulting in overall, efficient minicomputer disk use.

ASCS' method for projecting future county office minicomputer disk capacity requirements is based upon current inefficient disk use. As a result, ASCS' estimates of future minicomputer disk capacity needs are questionable because ASCS projects wasted disk space into future periods. By not eliminating these files from ASCS' projections, inaccurate estimates of disk capacity requirements and associated equipment needs occur.

Given our concerns with ASCS' procedure for estimating future disk storage and equipment upgrade needs, we made our own estimate. We limited our estimate of ASCS' needs to the 1990 to 1992 period because the new farm bill may substantially change the agency's future equipment needs. Before the end of 1992, ASCS should be cognizant of these changes and be able to modify its request for procurement funds accordingly.

We made calculations based on more judicious disk usage that basically assumes compliance with existing ASCS disk management procedures. We also incorporated historical rates of growth for software and data files, and then used this to project future

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needs. Our estimates indicate that ASCS funding requirements for minicomputer equipment upgrades, maintenance, and software for the remainder of fiscal year 1990 through fiscal year 1992 would be approximately $20 million. Our projections assume that the average disk storage trend in growth for the past 2 years would continue through 1992. If we increase our funding estimate by 25 percent to account for automation changes ASCS may face after such events as the passage of the 1990 farm bill (the practice employed by ASCS for its own funding estimates), the figure would rise to about $25 million. This increase could be met within ASCS' remaining procurement authority, eliminating the need for the additional $57 million in procurement authority ASCS specified in its May 1990 request.

FUTURE CHANGES NEEDED

Ineffective contract management, poor systems design planning, and inadequate project oversight have directly contributed to ASCS spending more in systems' development costs for GIMS and PCIMS than was originally estimated. Unless these deficiencies in information resources management are corrected, future information systems projects may suffer from similar problems.

An improved disk capacity management program would help ASCS better manage existing disk space usage and more accurately identify requirements for future disk capacity needs. Improvements in its minicomputer capacity and performance monitoring could lessen the need for the additional equipment purchases planned through 1992. Until ASCS corrects shortcomings in its disk management procedures and the methodology used to estimate future minicomputer equipment needs, risks increase that additional ASCS funding requests will not be fully justified.

More important, these problems raise concerns for ASCS' upcoming effort to replace all county office computer equipment by the end

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of 1996. This project will be one of the most significant automation undertakings the agency will face in the 1990s, with a current estimated life cycle cost of close to $1 billion. Delay in starting this major effort has already resulted in the need for millions to be spent on interim computer upgrades. In constructing its approach to this major agency automation project, we believe ASCS will need to resolve the weaknesses found in our review of important information systems development projects.

During the course of our review, ASCS' Kansas City Management Office did initiate steps to improve disk capacity management procedures, including more comprehensive guidance on methods that county staff can use to help better use and manage their minicomputer disk capacity. We view these as positive steps, and the changes could improve the accuracy and timeliness of KCMO's disk capacity monitoring.

To facilitate ASCS' efforts at resolving problems identified in our report, we are making a series of recommendations to the Secretary of Agriculture to improve the way ASCS manages system development projects and estimates and justifies computer needs at county offices. In particular, we believe that measures should be taken to ensure that information needs are sufficiently identified before advancing to the systems development stage and that project size and scope are reasonably controlled.

In addition, we are recommending that ASCS' fiscal year 1990-92 funding request for county office minicomputer upgrades, maintenance, software, and other equipment should be reestimated. Any additional funding needed beyond the approximately $26 million remaining in existing procurement authority should be contingent upon improvements in ASCS' forecasting methods to more accurately estimate equipment needs. Approval of ASCS' requests for county office minicomputer procurement authority for fiscal year 1993 and

beyond should be contingent upon implementation of a more effective disk capacity management program.

Mr. Chairman, this concludes my statement. Thank you again for this opportunity to present our views to the Subcommittee. I will be happy to answer any questions that you or members of the Subcommittee may have about our work.