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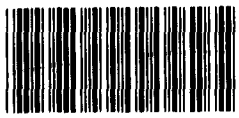

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General Accounting Office Reviews of Agricultural Research Activities

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Before the
Subcommittee on Agricultural
Research and General Legislation
Committee on Agriculture, Nutrition,
and Forestry
United States Senate

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Mr. Chairman and Members of the Subcommittee:

Thank you for the invitation to appear before this Subcommittee to present information on our earlier reports on agricultural research activities. Although we have not had the opportunity in recent years to review programwide aspects of the U.S. Department of Agriculture's (USDA) agricultural research activities, we issued several reports in the early 1980s dealing with such subjects as long-range planning, personnel needs, use of research facilities, and funding. We also have issued reports since 1980 on particular aspects of agricultural research, such as small farm research, human nutrition research, and biotechnology. Except for the biotechnology reports, which have been issued since 1985, these reports were also issued in the early 1980s.

As discussed with the Subcommittee, I will summarize our earlier programwide reports, discuss the recommendations we made at that time, and provide an update on actions that have been taken on the recommendations.

LONG-RANGE PLANNING

We reported in July 1981 that the U.S. agricultural research and development system did not perform national long-range planning that would meet generally accepted definitions of such planning.[1] Essentially, long-range planning entails establishing goals, selecting strategies for achieving those goals, setting priorities, and preparing short-range implementation plans.

We said that increasing demands for food and fiber combined with increasing pressures on agricultural inputs--water, land, and energy--made it all the more important that national long-range

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[1]Long-Range Planning Can Improve the Efficiency of Agricultural Research and Development (CED-81-141, July 24, 1981).

planning be undertaken for agricultural research and development. What has also become apparent is that the United States must find ways, including the development of new products and technologies, to improve the competitive position of its agricultural products in world markets.

We pointed out that the key participants in the agricultural research system--USDA, the land-grant institutions, and the state agricultural experiment stations--had engaged in long-range planning to only a very limited extent; no rationale for long-range planning had been developed; and past planning efforts had not resulted in national, systemwide long-range plans. The planning efforts at that time dealt primarily with short-term or operational planning. The long-range planning that had occurred was done almost exclusively by USDA and focused on in-house research.

We pointed out that the states and USDA had worked together, coordinated research, and exchanged extensive amounts of information but that these efforts were independently managed and planned. Many individuals in the agricultural research and development system supported the concept of national long-range planning, but a number of factors inhibited such planning. Management and planning for individual research projects were split among federal, state, local, and private authorities; and this fact, plus frequent changes in departmental leadership, a lack of continuing congressional interest, and limited executive interest and guidance, made long-range planning extremely difficult.

We recommended, as we had in a 1977 report, that the Secretary of Agriculture develop an agencywide long-range plan for agricultural research and development.

In December 1981 the Congress amended the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (title XIV of the 1977 farm act) to state that long-range planning

for research, extension, and teaching was a key element in meeting the act's objectives and that, accordingly, all the elements in the food and agricultural science and education system were encouraged to expand their planning and coordination efforts. The 1981 amendments also required the Secretary to take the initiative on overcoming barriers to long-range planning by (1) developing, in conjunction with the states, state cooperative institutions, the Joint Council on Food and Agricultural Sciences, the National Agricultural Research and Extension Users Advisory Board, and other appropriate institutions, a long-term needs assessment for foods, fiber, and forest products and (2) determining the research requirements necessary to meet those needs.

Following enactment of the amendments, USDA asked the Joint Council to direct the preparation of a long-term needs assessment, which was published and sent to the Congress in January 1984. In addition, USDA has developed long-range plans as the basis for future research management. In 1983, for example, it developed a plan consisting of a strategic plan, an implementation plan for the period 1984-90, and operational plans supporting the strategic plan. In September 1985 USDA published its second implementation plan, which covered the period 1986-92.

PERSONNEL NEEDS

In a December 1981 report,[2] we pointed out that USDA could do a better job in carrying out its responsibilities as the federal government's lead agency for keeping abreast of personnel needs in the food and agricultural sciences. We found that USDA's Office of Higher Education, which was created following the 1977 act, had worked with university representatives to identify issues and concerns related to the need for graduates in the food and

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[2]Lead Agency Responsibilities to Keep Informed of Personnel Needs in the Food and Agricultural Sciences (CED-82-25, Dec. 28, 1981).

agricultural sciences. However, it was not interacting with industry and federal agencies that also use such personnel. As a result, USDA was not obtaining a complete and up-to-date profile of the overall supply/demand picture and personnel development requirements for food and agricultural science personnel.

We recommended that the Secretary of Agriculture, through the Office of Higher Education, interact with a cross section of organizations, including government agencies, industry, and universities, that employ graduates trained in food and agriculturally related sciences.

USDA responded that the observations in the report would be useful in discharging its responsibilities and that it would be especially cognizant to obtain input from agricultural industry representatives as well as interact with other federal agencies in developing future assessments of food and agricultural science personnel needs.

In December 1985 the Congress amended the 1977 research, extension, and teaching policy act to add that the U.S. agricultural system requires a constant source of food and agricultural scientific expertise to maintain this dynamic system. The Congress also extended through September 30, 1990, the authorization for annual appropriations of $50 million for grants and fellowships for food and agricultural sciences education.

In discussing human capital development needs before the House appropriations subcommittee this year, USDA's former Assistant Secretary for Science and Education said that trends indicate a shortage of scientific and engineering personnel in the coming years and that many researchers in the federal and state system are at or near retirement age. He said that a broad need exists to strengthen the programs at the nation's colleges of agriculture and

natural sciences, which produce scientists and other professionals with food and agricultural expertise.

In support of this need, USDA proposed two new programs: (1) a program of competitively awarded grants to build the capacity of the historically black 1890 land-grant institutions to recruit, train, and graduate high quality students and (2) a challenge grants program to fund the most meritorious proposals to revitalize curricula, encourage faculty development, support instrumentation, and improve student recruitment and retention in agriculture programs. Both programs would include a requirement for matching funds from nonfederal sources.

FEDERAL AGRICULTURAL RESEARCH FACILITIES

In a January 1983 report on federal agricultural research facilities,[3] we said that, despite the underuse of existing laboratories, new laboratories were under construction and others were being planned. We concluded that these additional facilities could further reduce the overall rate of use because the Agricultural Research Service's (ARS) personnel ceiling was not expected to rise in the foreseeable future. In addition, staffing of new laboratories might result in reduced staff at existing ones.

We said that to fully use its existing research facilities, ARS would require a substantial increase in its annual appropriations and higher personnel ceilings. We pointed out that ARS had closed some facilities and transferred staff to other locations to improve facility use and that, in response to an administration directive to identify low-priority activities for elimination, ARS had developed plans to close up to 12 research facilities.

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[3]Federal Agricultural Research Facilities Are Underused (GAO/RCED-83-20, Jan. 14, 1983).

We added that long-term planning and good justification for closures were necessary before research laboratories can be closed and that new facility construction or major expansion of existing space should be tied to long-range research goals and objectives.

We recommended that the Secretary develop a plan to consolidate agricultural research activities at fewer locations, thereby allowing greater scientist interaction and more efficient use of equipment, facilities, and administrative resources. We said that the plan also needed to address research priorities, personal and career plans of ARS employees, the costs of relocating employees, and the potential sales values of unneeded laboratories. We recommended that the Secretary submit the plan to the appropriate committees of the Congress for their review and comments.

We suggested that the Congress consider not authorizing or providing funds for additional research facilities until ARS had completed its planning process and the Congress had studied those plans given the existing underused research facilities, the unlikely prospects for personnel ceiling increases for ARS, and the congressional mandate to conduct a long-range needs assessment and to determine the research necessary to meet those needs.

ARS agreed that the report was correct with regard to space utilization. In developing its long-range plans, which I referred to earlier, ARS considered and included as part of its overall plans, laboratory needs, including suggested consolidations and closures.

More recently, the Chairman and other members of this Subcommittee, the full Committee, and the House Committee on Agriculture asked the Secretary for an overall assessment, in the research area, of USDA's infrastructure needs and plans for the

future. They asked for specific information on research facilities and for the Secretary's view on the relative priority that should be placed on funding for new facility construction, older facility refurbishment, scientist and support salaries, and equipment purchases.

In response, the Secretary said that he would not apply a firm rule to setting priorities among these items. He said that, instead, he would expect the agencies to identify research program priorities, which would, in turn, form the basis for an assessment of available staff, equipment, and facility resources and the need for additional resources. According to the Secretary, facilities are available, in most cases, to conduct needed research and, in cases where high priority research is hampered by a lack of appropriate facilities, specific proposals would be considered through the budget process.

The Secretary also said that, as future budgets are developed, USDA would continue to carefully consider facility needs as they relate to priority research programs.

FEDERAL AGRICULTURAL RESEARCH FUNDING

In October 1983 we reported on issues and concerns regarding federal agricultural research funding.[4] We studied the regional distribution of the funds administered through USDA and obtained the views of state and federal research leaders on agricultural research funding issues.

We found that (1) both regional distribution of federal agricultural research funds and funding by the states varied widely depending on the specific research program and (2) interviews with

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[4]Federal Agricultural Research Funding: Issues and Concerns (GAO/RCED-84-20, Oct. 20, 1983).

officials at 14 land-grant institutions indicated that both federal formula and competitive grant funds for their research programs were favorably received, and any changes in formula allocation would generally be opposed. These officials generally supported increases in formula-derived funding to keep pace with inflation and in funding for the competitive grants program.

We did not make any recommendations in that 1983 report and, as I mentioned earlier, we have not had an opportunity to review the research funding area since then.

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That concludes my statement. I would be happy to respond to any questions you may have.