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Statement of
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Before the
Subcommittee on Natural Resources, Agriculture
Research and Environment
House Committee on Science and Technology

on

General Accounting Office Reviews of Agricultural Research and Development and Extension Activities

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today at your request to discuss the results of our major reviews during the past few years relating to Department of Agriculture research, development and extension activities. As you know, agriculture plays an important role in U.S. society, and food and agricultural research and extension has made a significant contribution to the agricultural sector. The Federal/State research and extension partnership has given us new and better ways to improve production, processing, and marketing of food as well as helping solve problems in environmental quality and human nutrition. Today, however, scientists are concerned that new technology may not be keeping pace with domestic and world food needs.

During the past two years we have completed several major studies dealing with agricultural research and extension activities. These include (1) long-range planning for agricultural research and development, (2) management of plant genetic resources--or

germplasm, (3) activities of the cooperative extension service, (4) nutrition research planning and coordination, and (5) personnel needs in the food and agricultural sciences. I will now briefly summarize the studies we have done in each of these areas.

LONG-RANGE PLANNING FOR AGRICULTURAL RESEARCH

Our July 21, 1981, report entitled "Long-Range Planning Can Improve The Efficiency of Agricultural Research and Development" (CED-81-141) dealt with the need to improve long-range planning for agricultural research. We reported that the Department of Agriculture does not perform national long-range planning for agricultural research which would satisfy generally accepted definitions of such planning. Essentially such planning entails establishing long-range goals, selecting strategies for achieving those goals, setting priorities, and preparing a series of short-range plans to accomplish the goals. The key research participants --the Department of Agriculture, the land-grant colleges, and State agricultural experiment stations--do engage in some aspects of national long-range planning but only to a limited extent. Most of the agriculture research planning that is done is not national long-range planning and no rationale for such planning has been developed. Current planning efforts primarily involve short-term or operational planning.

USDA has attempted to set goals for USDA-conducted research, has done long-range planning for individual inhouse research topics, and has developed operational plans for inhouse research, but these efforts have not resulted in a national long-range plan.

A number of factors inhibit national long-range planning. These include (1) a general belief by agricultural scientists that long-range planning is a "luxury" and cannot be afforded; (2) concern by the States that a stronger USDA research planning effort would eventually lead to Federal planning and control of State research operations; and (3) frequent changes in departmental leadership with limited executive interest and guidance in long-range planning.

We concluded that it was unlikely that national long-range planning efforts for agricultural research and development can be immediately undertaken given the inhibiting factors facing the system. We said that a better approach would be for Agriculture and State research organizations to cooperate in developing a first step in long-range planning--making a food needs assessment and determining the research alternatives that would assist in meeting those needs.

The Department of Agriculture agreed that long-range planning is one of the ways to maintain and improve agricultural research and development and that the Joint Council on Food and Agricultural Sciences would conduct a food and agriculture needs assessment. The Department issued a request for proposals on the needs assessment and is now in the process of reviewing proposals for this project.

THE DEPARTMENT OF AGRICULTURE'S GERMPLASM PROGRAM

One specific research area which we feel is important is the Department of Agriculture's management of a program to help preserve the base stock--or germplasm--of domestic and wild food

plants from which all primary crops are grown. Over the years, the genetic base of this Nation's crops has become increasingly narrow which presents a potential danger to U.S. crop production. If genetically uniform characteristics in plants are suddenly adversely affected by disease, insects, or poor weather, the potential crop losses could be substantial.

We have issued two reports dealing with germplasm. In our April 10, 1981, report entitled "The Department of Agriculture Can Minimize the Risk of Potential Crop Failures" (CED-81-75) we assessed the overall management of the germplasm system. In our December 4, 1981, report entitled "Better Collection and Maintenance Procedures Needed To Help Protect Agriculture's Germplasm Resources" (CED-82-7) we addressed specific operational problems associated with the Department's germplasm program.

Because the Nation's major crops have been developed from plants not native to the United States, the Department, in association with State experiment stations, land-grant colleges, and private curators (germplasm storekeepers), has long maintained a series of germplasm storage units which generally collect, store, and distribute plant germplasm. This system--the National Plant Germplasm System--is supposed to meet national needs for plant genetic resources.

In our April 1981 report we concluded that, as currently organized and managed, this system does not determine the risks of genetic vulnerability or adequately perform the housekeeping chores of collection, maintenance, and evaluation of germplasm stock. The system's inadequacy was primarily attributable to the

decentralized management of germplasm resources, which effectively prohibited the development and implementation of an integrated germplasm development, maintenance, and research program.

We recommended that the Secretary of Agriculture place planning, budget, and other management functions for the Department's germplasm activities under a central authority within its Science and Education organization. We also recommended that the Secretary develop a comprehensive plan to assess the genetic vulnerability of U.S. crops; determine gaps in existing germplasm collections; assure that desirable genetic characteristics of individual species are made available; and develop an information system for disseminating information on collections and evaluations.

The Department made management changes to provide a better focal point for program management. Further, the Department agreed with our recommendation that a comprehensive plan for genetic resources should be developed and established a working group to develop such a plan. The plan has been completed and is currently under review by the National Plant Germplasm Committee.

In our December 1981 report we concluded that a number of collection, storage, and maintenance problems seriously endanger this Nation's germplasm resources. These include inadequate backup storage for the germplasm system, inadequate storage conditions for many of the germplasm collections, curators who are behind in replenishing their germplasm or lack equipment to determine when the germplasm needs to be replenished, and serious gaps due to missing or depleted stocks in the small grains collection.

We recommended that the Secretary of Agriculture address the operational problems of the National Plant Germplasm System. His actions should include implementing a policy for backup storage; inventory and update the small grains collection; and assuring that germplasm is adequately stored, monitored, and replenished as needed.

The Department agreed with our conclusions and recommendations and is taking certain corrective actions, including an update of the backup storage system and the establishment of site assessment teams to assess the specific storage and maintenance problems at the germplasm collection sites.

ACTIVITIES OF THE COOPERATIVE EXTENSION SERVICE

In our August 21, 1981, report on extension activities entitled "Cooperative Extension Service's Mission and Federal Role Need Congressional Clarification" (CED-81-119) we pointed out that the cooperative extension service--which is made up of the Federal Extension Service in the Department of Agriculture, the State Extension Services located within the land-grant colleges and universities, and local offices in virtually every county--originally focused on agriculture and home economics subjects in primarily rural areas, but that the range of programs offered and audiences served by the Service has broadened substantially, especially during the past two decades. The Extension Service, which has considerable local programming flexibility, is now active in rural, urban, and suburban communities and conducts programs in social and economic problems and cultural,

recreational, and leisure time activities as well as in more traditional subjects.

The Extension Service was established in 1914 primarily to provide farmers with information from agricultural research and to encourage them to adopt improved farming methods. Its legislative mandate is broad enough, however, to allow for different interpretations of what the Service ought to be doing and for whom.

As more programs vie for the Service's resources, disagreements have occurred over its mission. Some groups believe it is ignoring their needs; others say it is trying to be all things to all people. Differing opinions about the scope of its mission are voiced even within the Service itself. The Department of Agriculture's role in providing overall program leadership and guidance in evaluating extension activities is also not clear.

We saw a need to reexamine the Cooperative Extension Service's mission, including the appropriate Federal role. We also highlighted program, clientele, funding, and organizational issues that we believed needed to be reviewed.

The Department of Agriculture agreed that clarification of the Service's mission would be most helpful and appropriate. To this end the Secretary of Agriculture and the President of the National Association of State universities and land-grant colleges established, in January 1982, a Joint Committee on the Future of Cooperative Extension which is charged with developing recommendations on the appropriate mission, scope, priorities, and future

direction for the Extension Service. The Joint Committee is expected to issue its report in late 1982 or early 1983. Furthermore, the Subcommittee on Department Operations, Research, and Foreign Agriculture of the House Committee on Agriculture, held oversight hearings on the Cooperative Extension Service during February and March 1982. A report on these hearings is currently being written.

FEDERAL HUMAN NUTRITION RESEARCH PLANNING AND COORDINATION

In our May 21, 1982, report entitled "Progress Made in Federal Human Nutrition Research Planning and Coordination; Some Improvements Needed" (CED-82-56), we stated that the Government does not yet have an overall Federal nutrition research plan that identifies specific goals with unified and coordinated strategies. The Departments of Agriculture and Health and Human Services, along with the Office of Science and Technology Policy have made strides in the latter half of the 1970's in laying the groundwork for a coordinated research planning system. Nine Federal departments and agencies, covering diverse areas such as nutrition research, food regulations, education, and information, have been working together to facilitate communication and effective and efficient use of resources.

The Office of Science and Technology Policy has been a major contributor to, and catalyst for, improved coordination of nutrition research through its Joint Subcommittee on Human Nutrition Research, which is made up of representatives from the Departments of Agriculture and Health and Human Services and seven other departments and agencies. In December 1980 the Joint Subcommittee

issued a report entitled "Human Nutrition Research and Training". This report is a first step toward developing a Federal nutrition research plan. However, the six research areas discussed in the subcommittee's report should be further developed and expanded into a single research plan which would include an assessment of needs, priorities, and strategies.

We recommended that the Director of the Office of Science and Technology Policy direct the Joint Subcommittee on Human Nutrition Research to develop a Federal nutrition research plan by updating and expanding its December 1980 report on federally supported human nutrition research. The subcommittee and the Federal departments and agencies should work together to develop specific goals, objectives, and strategies, and to identify their responsibilities and the required resources and time frames to accomplish the research goals.

The Office of Science and Technology Policy, and the Departments of Agriculture and Health and Human Services agreed in principle with our recommendation for a Federal nutrition research plan. The Office of Science and Technology Policy told us recently that it is the intention of the Joint Subcommittee to update and expand its 1980 report and to use it as the vehicle for evolving a broad Federal nutrition research plan.

PERSONNEL NEEDS IN THE FOOD AND AGRICULTURAL SCIENCES

In our December 28, 1981, report entitled "Lead Agency Responsibilities To Keep Informed of Personnel Needs in the Food and Agricultural Sciences Are Not Being Fully Met" (CED-82-25), we pointed out that the Department of Agriculture 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. The Secretary of Agriculture, who was assigned such responsibilities under the Food and Agriculture Act of 1977 created an Office of Higher Education in 1978 to carry out these responsibilities.

We found that this Office was interacting with university representatives to identify issues and concerns related to the need for graduates in the food and agricultural sciences. However, it was not interacting with industry and Federal agencies that also use such personnel. As a result, it was not obtaining an accurate 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 (industry and Government agencies, as well as universities) that employ graduates trained in food and agriculturally related sciences. The Department of Agriculture said that the observations in our report are useful to the Department in discharging its responsibilities as the lead agency in monitoring personnel needs for the food and agricultural sciences. The Department said also that it will 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.

This concludes my statement. My colleagues and I would be happy to respond to any questions you might have.