OPENING CEREMONY

A Sense of Urgency

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This prestigious assembly of professionals plays an important role in world agriculture. Conferences such as this are important forums for discussing and solving the pressing needs of world agriculture. This conference is the first of its kind in Latin America and brings together specialists from around the world. More than 100 plenary and round table presentations will provide a thorough review of soybeans from the research that is concerned with increasing the quality and production of oil and meal processing and further processing into nutritious foods.

This conference, therefore, is important to the world in that it transmits knowledge and technology about soya particularly for nations that can improve the nutritional quality of foods in their diets. It also establishes dialogues between experts in soya processing and technology and those who can put such knowledge to practical use. The USDA strongly supports this process and endorses the constructive international exchange of information promoted by the working sessions.

In speaking for Secretary Bergland and the USDA, I emphasize our commitment to participate with the world's nations in improving the methods of food production and reducing the barriers that hinder optimum production. My colleagues and I are here with a sense of urgency. The world needs food. That situation will not improve but will soon grow to staggering proportions. I wish to talk to you today about this urgency—the need of every nation to address the problems facing food production and to set their course toward solution.

For hundreds of millions, the outlook for food and the other necessities of life will not improve. Barring revolutionary advances in technology, life for most people on earth will be more precarious in the year 2000 than it is now unless the nations of the world act decisively to alter current trends.

The rapid growth in world population will have changed little by the year 2000. The population will grow from 4 billion in 1975 to 6.35 billion, an increase of more than 50%. The rate of growth will slow only marginally, from 1.8 to 1.7% per year. In terms of sheer numbers, the population will grow faster in 2000 than today, with 100 million people added each year, compared with 75 million in 1975.

The U.S. will not be able to continue indefinitely to supply food in increasing quantities to other nations as it has in the past, given the population phenomenon. The plain fact is that the yields for many crops seem to be on a plateau. Here we are into the 1980s and we know that without accelerated efforts and some major breakthroughs, the rate of growth of our food supplies will not keep pace with demand. An essential force for increasing the amount and quality of food for people everywhere is research.

Through agricultural research, the world can produce the knowledge and technology needed to increase food production. Future research adequately analyzed and pinpointed for its relevance to present and future needs is the critical element in maintaining genetic diversity and ensuring efficient use of water, soil and other resources. This will be the bulwark against scarce and costly food supply. The challenge is to insure that the appropriate research is stressed.

Many feel that the anticipated incremental increases in world agricultural productivity will not be adequate to meet the increased demands of an expanding world population. Development and acceptance of nonconventional sources of protein, for example, are at least 20 years away. The most reliable and cost effective way to assure food and fiber supplies adequate for U.S. and world needs by 1985 and beyond is development and application of new technology to increase productivity in conventional crops and livestock, as well as research related to less conventional utilizations of food and feed. There is a consensus that the world must increase the rate of technological advancement in agricultural research at least to maintain our ground in producing an adequate supply of food, timber and fiber.

A recent study concludes that the annual rate of productivity growth in agriculture has been approximately 1.5% per year for the past 50 years, but that dropped alarmingly in the 1960s. Although productivity growth has recovered in recent years, this study further concludes that growth may drop to 1.1% or lower in the long term, in the absence of any major technological breakthroughs and without significant increases of investing in research and education.

The world faces a dangerous situation. If we fail to find the research breakthroughs we need and fail to develop related technology, the gap will widen between food supplies and worldwide food needs. At best, this will result in increased world hunger. At worst, we could have massive famine and starvation. As demand exceeds supply, the world will face sharply increased food prices, inflation and social and political instability.

It should not surprise you that my references to technology are leading somewhere. Indeed, I hope the "somewhere" is obvious. In order to avert a food shortage potentially more catastrophic than we now view the energy shortage, we must invest globally in basic and applied

research and the transfer and exchange of appropriate new technology. The United States has a major and growing stake in international research collaboration with other countries. Much research done in the United States and other countries can serve users both in the U.S. and abroad. In our view, this attitude will not only permit the United States to contribute to the reduction of world hunger and malnutrition, but also will enable the U.S. to obtain the greater benefits from scientific advances from abroad. Building working relationships among research groups in the developed and developing countries will accrue major benefits to all parties.

I present a bleak picture—a pressing, complex problem. Perhaps I should be more optimistic, but I am concerned about the future.

I am not predicting a world food catastrophe. I am stressing, however, that all scientists should seek and have access to collective experience, and apply the lessons gained from the energy situation to international agriculture. We cannot assume that the necessary technology will be available unless we have the foresight to invest now. Finally, for any products for which a worldwide market exists—be it food or fuel—international investment in research and development is essential, and the United States is prepared to carry its proportionate share of this responsibility. But the United States is neither the fount of world expertise nor economic resources.

I believe that the USDA should set the pace for the public and private U.S. scientific community that is concerned with food and nutrition to become internationally involved in collaborative research, to conduct research in overseas locations, to undertake training and advanced fellowships in research centers abroad, and to invite foreign scientists to work at U.S. facilities. I believe that an efficient way to address problems in sharing the collective experience is to provide a swift and open flow of technology between scientists and technicians, regardless of their citizenship.

I would like to share with you some thoughts that I believe offer an approach in this advancement of technology business. I hope you accept these thoughts on face value, ponder them philosophically, think of them in applicable terms, and then promote them in your own nations.

First let me frame my thoughts under this caveat: The U.S. wishes to share agricultural technology openly. Also, we are aware that our technology has limits and that many other nations have made significant advances toward improving production.

Now my thoughts!

The exchange of technology between nations and scientists is a relatively simple matter. It needs only three elements: One, the communication line must be open and unemcumbered; two, there must be mechanisms to determine the scientific priorities so that resources can be appropriately made available; three, the principal goal must be to improve science, and thus agriculture. Other considerations are secondary.

To open the access to technology on a global scale, in keeping with the above elements, the USDA has initiated a program that promotes international transmission of scientific information and expertise. The program is simple. A single office in the USDA, the Office of International Cooperation and Development, coordinates programs that facilitate the visits of scientists to and from nations to confer with their counterparts on scientific issues and research of priority concern. To facilitate this collaboration, the USDA in most cases develops bilateral agreements with other Ministries of Agriculture and builds into those agreements the necessary mechanisms for joint cooperation. Generally, working groups of scientists and decision makers are organized, and through those groups, programs of exchange and cooperation are developed.

As an indication of this program's results, in 1980 the USDA initiated 113 projects in 21 countries with $1.1 million in resources. Two hundred forty-seven U.S. scientists have visited their colleagues abroad. In turn, 137 foreign scientists have visited U.S. facilities through our programs and were supported by their countries.

The design of this program has not placed boundaries on who participates—on whether they are rich, poor, or politically aligned. Rather, the deciding factors are the priorities in science and technology and the ability and desire of the participants to contribute scientific expertise.

In Latin America, for example, we have emphasized scientific cooperation. With Mexico, the USDA has initiated 35 scientific exchange projects that cover a wide range of technical areas. We have also begun joint efforts in new crops such as Guayule and in the eradication of certain pests dangerous to both countries. In Venezuela we have concluded a cooperative agreement that will promote scientific exchange, technical assistance and training.

An example of a critical element of joint cooperation will be the arrest of dangerous animal diseases.

A small program with Costa Rica is a milestone effort. Costa Rican scientists have just visited the U.S. to advise our experts on land reclamation around Mt. St. Helens. Their expertise has proven invaluable. We are indeed grateful!

In Brazil, scientists from both countries will address such problems as swine fever and fire ants.

Elsewhere in the world, we are engaging scientists in face-to-face collaboration in many areas. In China, for example, collaboration has begun in such areas as the biological control of pests, forestry management, soil and water conservation and animal health. In Europe, collaboration centers on the problems of remote sensing, animal nutrition, integrated pest management, genetic erosion and livestock fertility.

We also have established linkages between the U.S. and foreign universities. To date, about 40 scientists have participated in exchanges.

At this point I see no end to the possibilities of cooperation. As we all know, resources are finite and when these resources are used, then perhaps our momentum will slow. We must persevere, however, to promote the sharing of technology.

In closing, I ask again, will the world heed the lessons of the energy crisis or will we continue to grant low priority to research and international collaboration until world food shortages arise and trigger public response and pressure? There are creative opportunities if we respond to the dilemma of these 2 questions. There are disastrous consequences if we don't.