



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

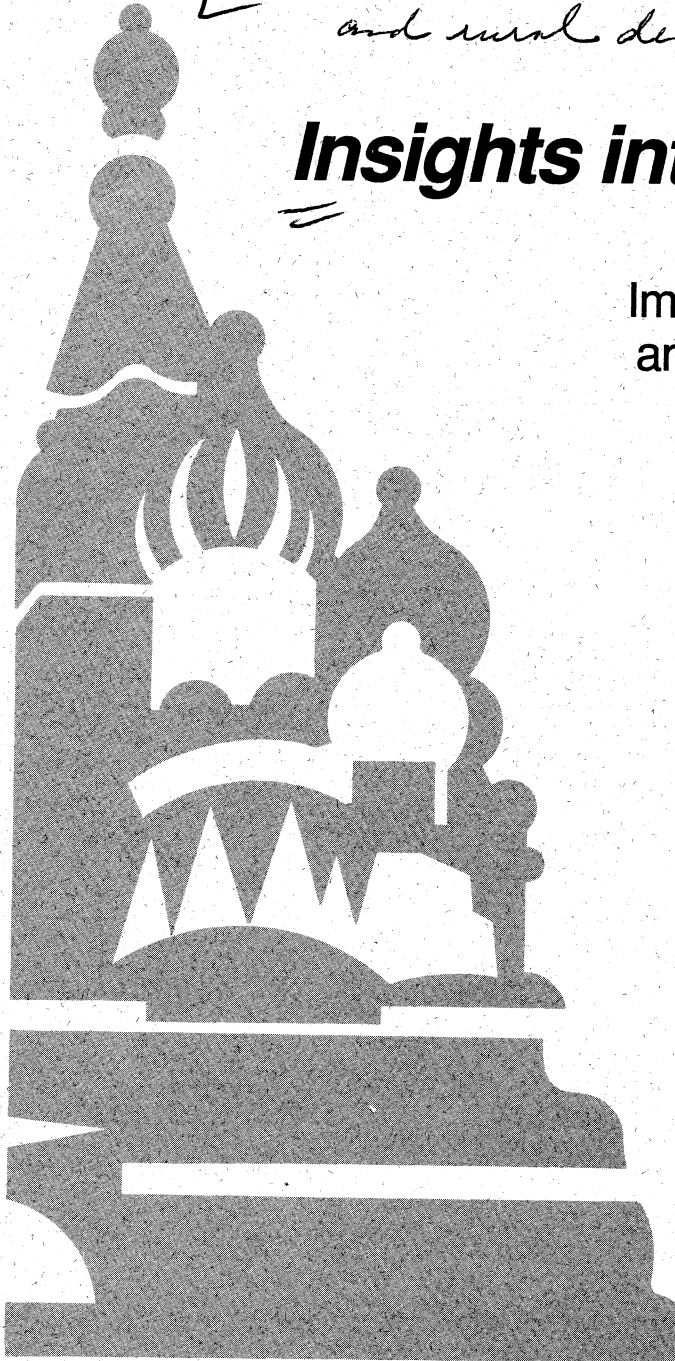
*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*Iowa State University, Center for agricultural
and rural development*

Insights into Perestroika

Implications for Agricultural
and Scientific Cooperation

**Summary
Proceedings**



STATE UNIVERSITY OF IOWA
LIBRARY
WATERLOO, IOWA
AGRICULTURE
ECONOMICS
FOUNDATION

A Symposium Presented May 21-22, 1990 by
Iowa State University and the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL)

About This Publication

Insights into Perestroika: Implications for Agricultural and Scientific Cooperation was held May 21-22, 1990, at Iowa State University. The symposium was made possible by a cooperative research exchange agreement between ISU and the USSR Lenin All-Union Academy of Agricultural Sciences (VASKhNIL).

This summary proceedings highlights the remarks of symposium speakers and panelists. All plenary sessions, working sessions, and luncheon addresses are included.

The two-day forum stimulated thinking on the implications of Soviet economic and political reforms. Information on the agricultural and science agendas in the Soviet Union was presented; ongoing cooperative projects were reviewed; and plans for future initiatives were formulated.

In the spirit of cooperation, an agreement to enable commercial exchanges was signed during the symposium by ISU President Gordon Eaton and VASKhNIL President Alexander Nikonov. This new agreement provides for scientific exchanges between the two bodies and expands the scope of participation by commercial firms.

Insights into Perestroika provided an opportunity to gauge the interest of midwestern agribusinesses in developing commercial exchanges with the Soviet Union. The interest shown by symposium participants will help pave the way for commercial initiatives.

The ISU-VASKhNIL Research Exchange Agreement

VASKhNIL is the acronym for the Lenin All-Union Academy of Agricultural Sciences. The preeminent agricultural research organization in the Soviet Union, VASKhNIL is a federation of member institutes employing more than 200,000 scientists and 240,000 support employees.

Formalized in 1988, the agreement between VASKhNIL and Iowa State University provides a structure for colleges and departments at ISU to negotiate exchanges and develop joint projects directly with selected institutes of the Academy. Iowa State is the first Western academic institution to sign a scientific agreement of such magnitude with VASKhNIL.

As of January 1990, more than twenty-four senior scientists had participated in short-term visits. They explored cooperative exchanges in economics, veterinary medicine, climatology, and agronomy. Two junior agricultural economists participated in a ten-month exchange. The 1990 work plan called for exchanges involving approximately thirty senior scientists and several junior scientists. Implementation of the commercial phase also is planned.

Contents

History and Background of the ISU-VASKhNIL Agreement	1
Verle Burgason, Gordon Eaton	
Two Views of Perestroika and Glasnost	3
Ivan Skiba, Marshall Goldman	
John McDonald, A. Arthur Davis, Robbins Fischer	
Swords into Plowshares: Reaping the Dividends for Agriculture	6
U.S. Senator Tom Harkin	
The Implications of Reforms for Soviet Agriculture	8
Victor Danilov, D. Gale Johnson	
John Chrystal, Ken Gray, Al Wanous	
The Organization of Agricultural Science in the Soviet Union	10
Alexander Nikonov	
The ISU-VASKhNIL Research Exchange Agreement	12
Governor Terry Branstad, Stan Johnson	
Victor Nazarenko, David Topel	
Agriculture and the Environment	14
Igor Uskov, Dennis Keeney	
George Hallberg, Jerry Hatfield	
Economic Reorganization	19
Victor Nazarenko, Stan Johnson	
Karl Skold, Karen Brooks, Ken Gray	
Plant Breeding, Genetics, and Crop Production.....	21
Vladimir Krivchenko, Ray Clark	
Vseovold Vitkovski, Richard Shibles, John Pesek	
Veterinary Science and Animal Health	23
Georgy Koromyslov, Ted Kramer	
Vaughn Seaton, Nolan Hartwig, Ole Stalheim, John McCarthy	
Animal and Meat Science	25
Joseph Rogov, Dennis Olson	
David Meeker, Severin Johnson, Jim Mullins	

Agriculture and Rural Development	27
Luidmila Petrova, Richard McHugh Paul Lasley, Kathy Beery, Tom Dorr	
Agricultural Management, Training, Information, and Extension Systems	29
Dmitri Strebkov, Mark Edelman Don Larson, Tom Hertz, Roger Ginder, Tim Wallace	
New Initiatives for Scientific and Economic Cooperation with the Soviet Union	31
Cooper Evans	
Related Readings	32
Conference Speakers, Panelists, and Moderators	33

*This summary proceedings was produced by the ISU College of Agriculture Information Office,
in collaboration with the Center for Agricultural and Rural Development.*

1991, Center for Agricultural and Rural Development
578 Heady Hall, Iowa State University, Ames, Iowa 50011
Telephone: 515-294-1183
FAX: 515-294-6336

Symposium Opening

History and Background of the ISU-VASKhNIL Agreement

Verle Burgason opened the symposium by welcoming all guests — particularly the many visiting Soviet scientists and agricultural leaders — to Ames. “This symposium represents a ‘people to people’ response to a world phenomenon called *perestroika*, said Mr. Burgason, who chairs the board of the *Ames Daily Tribune*.

Cooperation “during the next two days can be an example of how two great nations can work together to further a common good,” said Burgason, who introduced the opening speaker, Iowa State University President Gordon Eaton.

Roots in the 1920s

President Eaton began his remarks by describing how several beautiful items from the Soviet Union decorate both his home, The Knoll, and Beardshear Hall, seat of the university administration. The Soviet treasures at ISU are reminders of events that led to the ISU/Lenin All-Union Academy of Agricultural Sciences (VASKhNIL) research exchange agreement, said Eaton.

During the 1920s and 1930s, agricultural leaders in Iowa and the United States began discussing joint research and commercial initiatives with their counterparts in the Soviet Union. “Names identified with the Iowa initiatives from the 1930s through the 1960s include Henry A. Wallace, Roswell Garst, John Chrystal, Earl Heady, and Lee Kolmer. In the late 1980s, Iowa Governor Terry Branstad and the director of our Center for Agricultural and Rural Development (CARD), Stanley Johnson, were instrumental in reactivating interest in the possibility of exchanges and in negotiating a mutual research agreement with VASKhNIL,” said Eaton.

The possibility became a reality on Jan. 26,

1988, when Eaton and VASKhNIL President Alexander Nikonov signed a five-year agreement. The agreement provides a framework for the colleges, departments, and research centers of ISU

The agreement provides a framework for the colleges, departments, and research centers of ISU to negotiate research exchanges directly with any one of the more than 200 separate institutes of the Academy.

to negotiate research exchanges directly with any one of the more than 200 separate institutes of the Academy. Five research agreements were signed during September 1988. These agreements formed the basis of the first-year work plan, which has been successfully completed.

Scientific Exchanges

As part of that first plan, twenty-four senior scientists participated in short-term exchanges between the university and the academy. Two junior scientists — Karl Skold from CARD and Nikolai Atamanichenko from the Stavropol Institute of Agriculture — participated in one-year exchanges. New research agreements have been developed with VASKhNIL’s All-Union Research Institute for Agricultural Microbiology and Lithuanian Research Institute of Agricultural Economics.

During fall 1989, David Topel, dean of ISU’s College of Agriculture, led a delegation to the Moscow and Kiev offices of the academy. Several discussions on possible research agreements have resulted.

"Student to student, family to family, scientist to scientist; that's where the warmth has been generated to help thaw what we used to call the Cold War. And between Iowa State University and the [Soviet institutes], we are generating enough warmth, I believe, to overcome the sometimes disagreeable harshness of both the Iowa and the Russian winters," said Eaton.

The agreement has fostered scientific progress and enhanced ISU's research and educational programs. The scope of the original

agreement recently has been broadened to include stays of up to one year for senior scientists, as well as commercial and economic activity. With the basic agreement in place, unlimited opportunities exist for all involved.

"Our two institutions hold the lead in agricultural scientific exchanges," said Eaton. "We plan to stay there and make it work for our respective nations, our scientific disciplines, and for all of agriculture in the United States, in the Soviet Union, and throughout the world."

Two Views of Perestroika and Glasnost

A Soviet Perspective

Important changes have been initiated in the Soviet Union under the leadership of Soviet President Mikhail Gorbachev, according to agricultural leader Ivan Skiba. Skiba, who is chief of the Agricultural Department, Central Committee of the Communist Party, said political changes and broader participation in the governance of the Soviet Union were the first of the Gorbachev initiatives. These were followed by economic reforms designed to modernize agriculture and other sectors of the economy and to improve the level of economic growth.

The theme of the recent economic initiatives has been to develop a more market-oriented system. The important principle, Mr. Skiba said, is to turn the economy to meet the people's needs.

According to Skiba, it was former Communist leader Joseph Stalin who damaged Soviet agriculture by abolishing private land ownership and establishing collectivization. Attempts at restructuring during the 1950s and 1960s met with little success. These reforms, however, were largely within the context of the existing economic and political structure.

Through the efforts of Gorbachev, the May 1982 Central Committee plenary meeting led to sweeping political changes. These changes, along with more limited economic reforms, brought increases in the production of milk, meat, and eggs.

Although the reforms initiated by Gorbachev enjoy widespread support, he said, pessimism is increasing. In 1988, 100,000 workers left state-run farms. The exodus may be explained in part by still-existing policies. For example, the Soviet government pays in excess of four times for imported wheat what it pays for domestic wheat. Increasing the payment for domestic wheat by 50 percent is planned as a first step in adjusting

domestic and import prices.

The current agro-industrial policy was established in March 1989 and should benefit both the government and the people of the Soviet Union. The new policy calls for radical reconstruction of the countryside. Great efforts will be made to restore the attractiveness of the rural mode of life, to stop the flow of the rural population from the countryside, and to set up stable production teams, said Skiba.

The new policy also will allow individual

The important principle is to turn the economy to meet the people's needs.

Ivan Skiba

land ownership. While this means that the government will no longer cover losses, it should encourage efficiency and bring further increases in production. Introducing a market economy and giving producers an economic interest in production should provide stimuli for solving social problems, said Skiba.

Skiba also indicated that new policies are being developed to deal with great losses in agricultural processing and storage. He noted that labor productivity in socialized agriculture is rising in parts of agriculture adopting the reforms.

Perestroika is gaining strength in political, economic, and legal spheres, Skiba said. Agricultural leaders are optimistic about the future of the Soviet Union but at the same time they recognize that broad political and economic reforms are difficult to implement. These reforms may require some time before they translate into increased economic performance.

A U.S. Perspective

Marshall Goldman, associate director of Harvard University's Russian Research Center and Kathryn Wasserman Davis Professor of Soviet Economics at Wellesley College, provided a more severe interpretation of perestroika. The early optimism that typified the Soviet experience during the beginning of the Gorbachev era is now confronted with major economic and political realities, he said. The Soviets are finding it considerably more difficult to make the wholesale political and economic changes than was anticipated at the outset.

These changes, of course, involve major redistributions of economic and political power and income. Also, building a market-oriented economic system will, if it is to be successful, require the establishment of institutions and an infrastructure quite different from those currently in place in the Soviet Union. For most Soviet citizens, the economic situation is more complex and serious than it was five years ago.

Professor Goldman said that Gorbachev's ideas and policies initially led to increased morale and production, but he had no long-term plan for achieving his goals. Hence, some policies were initiated and later reversed. For example, a crackdown on private trade one year was followed by its legalization the next.

Although the Soviet harvest has increased, farmers have been holding back on grain deliveries or have been consuming it inside their districts. Not wanting to take rubles, the Baltic states in 1989 began refusing to sell agricultural goods to Russians. Proof of citizenship is required to buy food in several cities.

Gorbachev frequently has initiated the right solutions at the wrong time. For example, allowing private ownership of farmland might have been better received if it had come earlier in the reform process. Whereas the 1978 turnover of land to peasants in China brought about substantial increases in agricultural production, offers for family farm ownership in the Soviet Union are meeting with resistance. Some farms have even been burned in protest.

Joint ventures between foreign firms and Soviet enterprises also are facing a backlash, he said. Some bureaucrats say joint ventures exploit Soviet labor and natural resources. These people are working to make such dealings difficult or impossible at the very time the economy is in greatest need of capital and foreign technology. Reform efforts also are being challenged by the United Workers Front, an organization that supports a return to central planning.

Building a market economy is difficult and takes time, but destroying an alternative economy is simple and can occur quickly.

Marshall Goldman

Soviet GNP is down, as are oil and coal production. Some economists estimate an inflation rate as high as 20 percent. There is a large amount of liquidity in the Soviet economy that is likely to drive inflation higher if economic policy is not changed. Consumer goods are scarce, and rationing is widespread. Strikes and worker apathy have led to economic disruption.

All of this does not bode well for sustaining economic reform in the Soviet Union. Building a market economy is difficult and takes time, Goldman said, but destroying an alternative economy is simple and can occur quickly.

Goldman offered three suggestions for U.S.-Soviet cooperation in improving Soviet agriculture. First, future Soviet imports should increase the proportion of grains high in protein, such as soybeans and soybean meal, in relation to total USSR grain imports. Second, the Soviets should implement an American type of farming in terms of the "buying-selling" process as the mode of economic life and way of thinking. This would involve training Soviet farmers in U.S. agribusiness methods. Third, the nations should cooperate in the processing, storage, and marketing of agricultural produce and foodstuffs.

Other Views

In comments from the session panel, John McDonald focused on the credit due to President Gorbachev for the enormous political change that has resulted from such acts as the establishment of a freely elected Supreme Soviet. Mr. McDonald, who is president of the Iowa Peace Institute, noted that there is no guide book for Soviets who are trying to make the transition from a centrally planned economy. Still, he expressed optimism that the government will cope with the difficulties the country will encounter during the transition.

McDonald described three Iowa Peace Institute projects involving the Soviet Union. In one, a Russian family lived in Iowa for seven months, during which they made presentations throughout the state to a total of about 20,000 people. Another involved sending eighteen young Iowa farmers to a collective farm in the Ukraine for three weeks. The third resulted in the establishment of the Soviet-American Center for Conflict Resolution in Moscow. Training for 100 Soviets already has occurred. Training for twenty-five members of the Supreme Soviet is scheduled for November 1990.

Lawyer Arthur Davis, who is a member of

The task that lies ahead for the Soviet Union is beyond the range of any experience.

A. Arthur Davis

Business for Peace and chair of that group's committee on Soviet relations, noted that he had heard two views of perestroika described by session speakers, but little about glasnost. The transition to increased democratization (*glasnost*), he said, makes him hopeful about success for perestroika.

Mr. Davis quoted Clive Crook, economics editor of *The Economist*, who wrote in "And Now the Hard Part" that the task that lies ahead for the Soviet Union is beyond the range of any experience. Davis noted that before communism, the Soviet Union had feudalism; its people have no experience with democracy or capitalism. But he also said that the light of glasnost shines over the USSR as people learn a new lexicon containing such words as *stocks, bonds, credit, and income tax*.

Davis noted that some people distrust the Soviet Union's motives for political and economic change. He said that he cannot provide sure answers to the questions they raise. But he encouraged people to consider that although the fate of perestroika and glasnost rests with the Soviet people, U.S. action can be helpful or harmful to them.

Robbins Fischer, president of Soypro International, said that many national leaders believe that the production and distribution of food is the most important issue facing the Soviet Union. For that reason, the Insights into Perestroika conference is seen as one of the most important discussions being held between Soviets and U.S. citizens. Mr. Fischer said that his biggest concern was that the cooperative efforts under discussion would fail because both countries tend to focus too much on technological solutions and not enough on the people who make the technology work.

According to Fischer, management skills are the most scarce commodity in any society in the world. The Soviet Union must identify those few unique human beings with managerial and entrepreneurial talents. Then, he said, these individuals must be able to acquire the assets for production; they must have access to credit; and bankers must be trained to work with them.

Swords into Ploughshares: Reaping the Dividends for Agriculture

Seeking common ground and living in peace and friendship are important goals for both the United States and the Soviet Union, according to U.S. Senator Tom Harkin. Like Iowa, he said, the Soviet Union has some of the best farmland in the world and places strong emphasis on agricultural development and production. Farmers throughout the world are "bound together by the harsh uncertainties of weather, pests, and disease, by hard physical labor, and by the experience of taking their harvest to market and not getting enough in return."

Senator Harkin discussed the importance of programs that foster the exchange of people, information, and ideas and that promote friendship. He praised the organizations and individuals who work to make such exchanges possible.

An International Outlook

Although Iowans have strong ties to their farms and communities, he said, they have long recognized their role as internationalists. During the early 1920s, President Herbert Hoover's American Relief Administration helped prevent the starvation of millions in the Ukraine and Volga regions of the USSR. Iowan Henry Wallace, agriculture secretary under President Franklin D. Roosevelt, set new precedents for sharing agricultural knowledge with farmers in other nations.

While he was a student at Iowa State University, Harkin got his first look at a Soviet leader. Recalling former Premier Nikita Khrushchev's September 1959 visit to ISU, Harkin reflected on the Soviet leader's call for peace and friendship. Unfortunately, he said, the seeds of peace sown during that visit did not take root. Instead, the two nations entered into "a war of words, of

nerves, and of nuclear might."

In recent months, however, the relationship has improved. We are "making good on promises to destroy our nuclear weapons, rather than our threats to destroy each other. It is time, long past time, that we come to negotiation with the Soviet Union at the Strategic Arms Reduction Talks at the end of this year.

" [While] the Soviet Union is striving for perestroika, the American people are looking for a way to restructure and reinvest in America. We can work together to ensure the survival of the planet and of humankind."

U.S. Senator Tom Harkin

"It is time for us to start turning swords into plowshares," said Harkin, calling for both nations to refocus their priorities. Now that the United States and the Soviet Union once again are friends, he said, we can be allies in the fight against our common enemies — hunger, poverty, illiteracy, and lack of health care.

While "the Soviet Union is striving for perestroika, the American people are looking for a way to restructure and reinvest in America. We can work together to ensure the survival of the planet and of humankind," he said. American resources should go for providing better health care throughout society, improving education at all levels, stopping the scourge of drugs, and cleaning up and protecting the environment. "Now instead of 'peace through strength,' we are going to prove with words and deeds the truth of the phrase 'strength through peace.' "

Shared Challenges

Both nations face challenges. Both are seeking ways to foster rural development. And both have reason to be concerned about the environment. "Some of the U.S. abundance we brag about has had significant environmental costs. And as you [Soviets] look to American agriculture for more up-to-date methods, it is essential that you learn from — and not repeat — our environmental mistakes," said Harkin.

A major goal of the new five-year U.S. farm bill will be lessening the toll farming takes on the environment. Both agriculture and the environment can win as long as it is remembered that short-term increases in productivity aren't worth sacrificing the long-term sustainability of the soil and water, he said.

Harkin praised MATRIC (Midwest Agri-

business Trade Research and Information Center) and its track record in opening up new opportunities in foreign markets for small and mid-sized businesses. "MATRIC, in its Eastern Europe/USSR initiative, is making the most of the changes to forge new ties that are sure to benefit both sides," he said. He noted many possibilities for trade and joint ventures in all aspects of the agricultural industry.

Harkin also noted the possibility of establishing a Soviet extension service patterned after the Cooperative Extension Service at Iowa State. He concluded with a promise to continue working in the Senate to promote trade and friendship, to be "vocal and aggressive in helping to forge this new partnership — for trade, for understanding, and for peace."

The Implications of Reforms for Soviet Agriculture

History and Modern Development of Soviet Agriculture

Attempts to reform Soviet agriculture in the 1950s set the stage for today's perestroika, according to Victor Danilov of the Institute of History, USSR Academy of Science. Describing the history of Soviet agriculture as dramatic—even tragic—Academician Danilov discussed some pivotal events in Soviet history and their effect on agriculture.

As recently as the beginning of the twentieth century, Danilov said, in excess of 80 percent of the Soviet population worked in agriculture. After the revolution in 1917, farmers were no longer compensated for excess food and grain they produced. Production beyond that for their own needs was confiscated for government use.

In a country that was primarily agrarian seventy years ago, the (Soviet) government now has to create incentives for people to go back to agriculture.

Victor Danilov

Low yields and a devastating famine in 1921 led to new economic policies to encourage production. By 1927 an average farm consisted of a family of five to six people, with four to five hectares (about 10 to 12 acres) of crops. Each farmer produced enough to feed himself plus one more individual. Throughout the countryside, cooperatives began to develop in which several farmers would combine their efforts for more efficient production.

"The growth of agriculture kept going until the last day of [this] economic policy," Danilov said. "That is, as long as peasants were the ones

to decide what to do with the result of their work."

But Communist leader Joseph Stalin opposed the concept of incentives, and starting in 1928 he began a collectivization campaign. All production was confiscated. By 1936, two-thirds of all peasants had been forced into collective farms that were little more than labor camps.

In response to Stalin's policies, peasants began fleeing from villages to cities. In a country that was primarily agrarian seventy years ago, Danilov said, the government now has to create incentives for people to go back to agriculture. Stalin created disorder in the entire economic system in agriculture, according to Danilov, and only recently has Soviet agricultural output returned to the level of 1928 production.

It was then-Premier Nikita Khrushchev who first tried in 1958 to shift back to cooperatives, a system wherein farmers could share ownership of large farms and could sell their products. Khrushchev's reform program failed, Danilov said, but the lessons learned from those attempts at reform will help contemporary perestroika correct the problems in agriculture caused by the Stalinist system.

The Potential for Change

In considering likely progress toward reform in Soviet agricultural productivity, D. Gale Johnson, Eliakim Hastings Moore Distinguished Professor of Economics at the University of Chicago, discussed the potential for increased output and the reforms necessary to achieve it.

Agricultural output in the USSR fell at least 20 percent in the period from 1928 to 1938. It did not regain an early-1920s level of productivity until the Khrushchev era in the late 1960s, according to Professor Johnson. That trend was mirrored in China, he noted, where Chinese agri-

cultural output increased by 50 percent within six years of the end of collectivization.

There are major barriers to further increases in Soviet agricultural efficiency, however. They include the monopoly system, distorted prices for agricultural products and inputs, and a belief that acting as a middleman in marketing farm products is dishonorable because it means "profiting off the labor of others."

Johnson suggested that the major prerequisites to reform include (1) breaking up the government monopoly system to abolish "bureaucratic meddling" and allow farms self-governance regarding planting and other aspects of production; (2) correcting price distortions to bring prices more in line with real costs (Johnson noted that the current price set by the government for meat is two rubles per pound, or about sixteen cents); and (3) correcting the macroeconomic imbalance in the Soviet economy, in which inflation repressed by set prices appears in the form of shortages of goods available for purchase.

Incentives Needed

Panel discussion focused on the potential for agricultural reform in the USSR. John Chrystal and Al Wanous agreed that incentives, in the form of privatization and discretionary buying power, are a prerequisite to significant improvements in Soviet agriculture.

Mr. Wanous, who is a consultant to the vice president for international affairs at Land O'Lakes, pointed out that private landowners in Poland continue to out-produce the collective farms on a per-unit basis, despite lacking the benefits of economy of scale. Wanous said that Land O'Lakes is talking with the Soviet Union about setting up a project to establish working agreements similar to those the company has with small American leasehold farmers. He said

the situations are similar in that farmers in both nations face a great need of sources for inputs and markets.

Private landowners in Poland continue to out-produce the collective farms on a per-unit basis.

Al Wanous

Mr. Chrystal, former chair of the board at Banker's Trust, warned that it took 200 years to develop the high productivity of American agriculture; people must have patience during the time it takes the USSR to effect agricultural growth. But Wanous noted that Soviet agriculture will benefit from the mistakes of other countries that have already developed advanced agricultural systems. The Soviet Union will be able to leapfrog some technologies and avoid others that have proven detrimental. According to Wanous, this should allow rapid gains in efficiency and quality once incentive conditions are met.

Ken Gray, branch chief of the USDA Office of Central Planning Economics, pointed out that Soviet science has made its own contributions. He said the civilized world owes a great debt to early Russian plant scientists who only now are being recognized in their own country. Mr. Gray said that problems of agricultural production in the USSR have been overemphasized lately, and that Soviet production is basically strong. He suggested that transportation and marketing are the critical issues in improving Soviet agricultural efficiency.

Chrystal made note of some of the problems U.S. agricultural policies are causing family farms. If the United States and the Soviet Union can learn from each other, he said, cooperation will benefit both.

The Organization of Agricultural Science in the Soviet Union

"Science has never known state frontiers; neither has it known various 'walls' and 'curtains.' They were created by politicians," declared Alexander Nikonov, academician and president of the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL).

As keynote speaker, Academician Nikonov expressed the hope that perestroika would lead to increased cooperation between Soviet and American scientists, as well as with those of other countries. Joint teams, joint publications, joint ventures, and exchanges of trainees were among the possibilities Nikonov suggested.

Nikonov began by giving thanks to the people of Iowa for the hand of friendship first extended in the 1950s, "when we started thawing out hummocks of the Cold War," he said.

The Soviet Union faces long-standing stagnation and crises in agriculture and agricultural science, but there is light at the end of the tunnel, Nikonov said. Transition to a controlled market economy, land reform, optimization of the investment structure, resource conservation

"Science has never known state frontiers; neither has it known various 'walls' and 'curtains.' They were created by politicians."

Alexander Nikonov

technologies, and social policy aimed at improving rural conditions and increasing the professional skill of farmers were among the new programs he pointed to.

He noted that science plays a major role in many of these programs: "To solve complex problems of agrarian reform and to establish an

efficient food-production complex is impossible without science."

Science has had a bloody history in the Soviet Union. The Academy of Agricultural Sciences, established in 1929, saw its first three presidents die violent deaths during a period of national turmoil. Scientists were shot. Yet "the science was not shot," Nikonov said; research went on.

Efforts at Restructuring

During the "thaw" of the 1950s, agricultural research began to be reorganized. Important work was done in plant breeding, agricultural forestry, veterinary science, and other disciplines. But scientific developments were not introduced into practice very well.

At the organizational center of agrarian science today is VASKhNIL. The Academy, with 255 direct members, is an association of research institutes, laboratories, experimental stations and farms, and design bureaus that produce machinery. VASKhNIL has 573 experimental farms, with a total area of 3.5 million hectares (approximately 8.6 million acres).

The current restructuring in the Soviet Union began in 1985. It may have started in agricultural science earlier than in any other field, Nikonov said. Now science in the USSR is establishing more flexible structures for scientific and production associations and systems.

Soviet science has great potential, Nikonov said. There are large research and development programs in economics, soil science, agronomy, plant breeding, plant protection, animal production and veterinary science, water economy and land reclamation, forestry, mechanization and electrification, and the food industry.

The challenges to Soviet science also are

large. Agriculture in the Soviet Union is practiced in all geographical latitudes, with great diversity of soil and climatic conditions, ethnic structure and density of population, and historical traditions and culture. Solutions to agricultural problems in these areas will be unique to the Soviet Union. One does not want to "find himself in the position of a Saratov landlord who introduced in dry Volga basin steppes an intensive system of crop rotation he had found good somewhere in England or Belgium, and, naturally, went bankrupt," Nikonov said.

Research Priorities

Specific problems in Soviet agriculture include increasing levels of soil and water erosion and soil depletion, low levels of scientific and technical development in industry, economic imbalances in foreign trade, the diversity of farm-management systems, and an attitude that curbs growth and competition.

Research priorities include extending agricultural research to social questions, examining aspects of rural life; forming a controlled market mechanism, with price formation, credit, and commodity exchanges; developing new forms of farm management, based on cooperation of independent families and other small work collectives; adapting contour farming and other soil conservation technologies, including forestation and other methods for land reclamation; developing pest-resistant and drought-resistant varieties and hybrids of plants and animals, and gradual switching to biological and ecological pest control; applying energy conservation, including renewable energy sources; developing new food products based on full use of plant and animal raw materials; and modeling the whole food complex at the national, regional, and farm levels.

"With the demand for scientific developments on the part of industry and the changes taking place in our society, the role of agrarian science is becoming increasingly important," Nikonov said. "We're very happy about the fact that today we are seeing erected a bridge be-

tween science, industry, and production."

Difficulties such as lack of equipment and insufficient funding will have to be addressed. More specialists must be trained. Along with training specialists in the USSR, an extensive exchange of trainees with foreign universities and other research institutions will help to fill the gap. "What we need is stability to provide for gradual, step-by-step progress," Nikonov said. "In this respect, science is a progressive and stabilizing influence."

In a question-and-answer period following Nikonov's speech, he made other comments. Asked how Americans can benefit from Soviet agricultural science, Nikonov replied that cooperation between the countries will be a two-way street. He said that another ISU-VASKhNIL perestroika meeting was to be held in the Soviet Union in the fall of 1990 (see note below), where papers would be presented on topics including biological research, power production, renewable sources of energy, cultivation practices, and plant breeding. He made particular note of the large plant genotype collection available in the Soviet Union.

Speaking about how Soviet scientists have survived political persecution, he told a story of scientists guarding a major seed collection during the German blockade of Leningrad in World War II. A rumor circulated widely that, with starvation conditions rampant, the collection had been sacrificed to the hunger of the people. In truth, he said, many scientists died of starvation, but the collection remained intact.

"We have strengths," Nikonov said. As in that wartime siege, Soviet scientists have maintained science despite arrests, persecution, and great losses.

[**Editor's Note:** The second ISU-VASKhNIL symposium, "Agrarian Reform in the USSR and Problems of the Transition to the Market Economy," was held October 6-7, 1990, at Suzdal, USSR (near Moscow). A twenty-one-member delegation represented Iowa State University and the State of Iowa.]

The ISU-VASKhNIL Research Exchange Agreement

Iowa Gov. Terry Branstad opened the second day of the symposium with remarks that placed the ISU activities in a statewide context. In 1986, Governor Branstad led a state delegation to the USSR. Delegation members hoped to play a lead role in developing better U.S.-USSR relations, to build cultural ties, and to develop leads for agricultural trade.

In describing the results of that trip to symposium participants, Branstad noted that three specific goals had been met. A sister-state relationship with the Stavropol region has been developed; a research exchange agreement between Iowa State University and the Lenin All-Union Academy of Sciences (VASKhNIL) has been established and is entering its third year; and a U.S.-USSR trade conference was held in Cedar Rapids in 1987.

"This conference is an invitation . . . a way for many, both inside the university and out, to participate in the agreement by identifying and participating in international initiatives."

Stan Johnson

Branstad indicated his hope that a fourth goal — hosting a farm progress show on a Soviet farm — eventually will be achieved. "Iowa is a world leader in agriculture and agricultural technologies," he said, "and we believe the state can play a significant role in helping the USSR implement perestroika."

A Call for Participation

The Insights into Perestroika conference itself was conceived as a means of encouraging greater participation in the ISU-VASKhNIL

agreement, said conference organizer Stan Johnson. "This conference is an invitation . . . a way for many, both inside the university and out, to participate in the agreement by identifying and participating in international initiatives," said Professor Johnson, who directs the Center for Agricultural and Rural Development at Iowa State.

The 1990 work plan has been negotiated and broadened to include commercial activities, Johnson said. Conditions of the 1990 plan include opening reciprocal bureaus for facilitating communications and contacts, exchanging commercial delegations, and developing an intern program for facilitating broader scientific exchanges.

Victor Nazarenko, director of the VASKhNIL Institute of Information and Technology, Moscow, further described opportunities for commercial exchange in 1990. He called for more exchanges of people and emphasized the importance of the work plan. He stressed the need for greater activity in several areas, including breeding materials, veterinary science, biotechnology, food processing, and information systems.

Changes in the Soviet system are placing increased stress on scientific efforts that result in useful applications, said Director Nazarenko. Scientific/technological knowledge should flow in both directions, he said, noting that the United States has yet to realize some of the Soviet Union's scientific achievements.

There is a strong need, too, for the creation of an infrastructure to aid the exchange of knowledge and know-how. Licenses for commercial, industrial, and technological trade could be created. In this respect, he said, the conditions expressed in the 1990 plan provide a beginning.

Goal: A Stable Food Supply

David Topel, dean of the ISU College of Agriculture, noted that providing a stable, continuous food supply for both nations is the central goal of the ISU-VASKhNIL agreement. Doing so will require the vision and optimism to respond to such possible challenges as global warming and the greenhouse effect.

Dean Topel reviewed activities related to last year's (1989) work plan in seven areas: agriculture and the environment; economic reorganization; plant breeding, genetics, and crop produc-

tion; veterinary science and animal health; animal and meat science; agricultural and rural development; and agricultural management, training, information, and extension systems.

[Editors Note: For further review of activities within the research exchange, see the *ISU-VASKhNIL Agreement Annual Report, 1989*; ordering source listed at back of this book.]

Students, farmers, and others must find ways to keep this exchange ongoing and successful, said Topel.

Agriculture and the Environment

Agricultural research must seek methods of minimizing the negative effects of agriculture on the ecosystem, according to Igor Uskov, director of the Agrophysics Institute of Leningrad.

Director Uskov said that agricultural scientists must collect environmental data, develop and test models that evaluate current systems, and use those models to make sound agricultural projections. The push to increase productivity must be balanced against the ecological cost in determining the upper and lower limits of feasible productivity, both economically and ecologically.

Emphasis on Sustainability

Dennis Keeney, director of the Leopold Center for Sustainable Agriculture at Iowa State University, concurred that "sustainable agriculture is the agriculture of the future." "There is a growing realization that many U.S. farming systems have been designed without consideration for biological principles," Professor Keeney noted. Intensive farming of a small number of crops has increased levels of pests and rates of soil erosion, he said. Heavy use of pesticides and nitrogen fertilizers have contaminated surface water and groundwater supplies.

"Many feel a major change in farming systems must come about in the next decade or two if the United States is to remain globally competitive," Keeney said. New systems, popularly termed "sustainable," must incorporate biological principles for recycling soil nutrients, restoring soil quality, and controlling pests. Soil-conserving practices must become inherent in sustainable cropping systems, he said.

Water quality also is an area of significant concern in the United States, according to George Hallberg, chief of environmental geology with

the Iowa Department of Natural Resources. Excessive loading of sediment, organic matter, and nutrients to streams and lakes continues to be a major concern in many major agricultural regions of the world, Mr. Hallberg said.

"Many [Americans] feel a major change in farming systems must come about in the next decade or two if the United States is to remain globally competitive."

Dennis Keeney

According to Hallberg, nitrogen-related contamination of groundwater and surface water has been associated with intensive row-cropping and heavy fertilization for grain production; heavily fertilized vegetable crops, especially where irrigated; and concentrated animal feeding and handling operations. We need to balance our needs for production of food and fiber with our need for the protection of water quality and the environment, he said.

Improved Water, Nutrient Use

One key to developing sustainable agriculture systems is to improve water and nutrient use efficiencies, according to Jerry Hatfield, director of the National Soil Tilth Center at Iowa State University. That will require more detailed understanding of the relationships in the growth process, he said.

For example, Professor Hatfield noted, increasing the amount of water available to plants could help stabilize production from year to year. Techniques might include reducing soil water evaporation, modifying water infiltration into the soil, or increasing the volume of soil

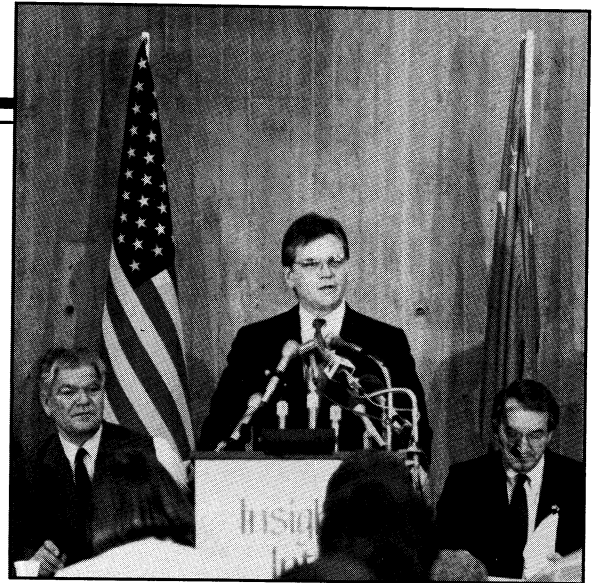
available to the plant roots. Any factors that lower risk in crop production will be beneficial, he said.

The panelists agreed that sustainability of agriculture is a global question and that opportunities for cooperative efforts between the USSR

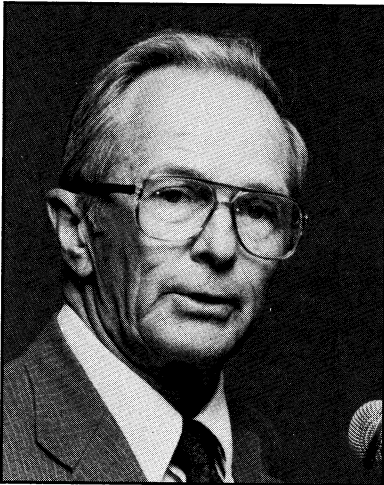
and the United States exist. Uskov said that model development and agricultural policy research are particularly good areas for cooperation. He reminded the audience that issues such as global warming need multinational, interdisciplinary solutions.

Conference photos

John Chrystal, former CEO and chair of the board, Banker's Trust Co., and longtime Iowa contact with the Soviet Union.



Stan Johnson, director of the ISU Center for Agricultural and Rural Development, describes aspects of the Soviet exchange during a press conference.



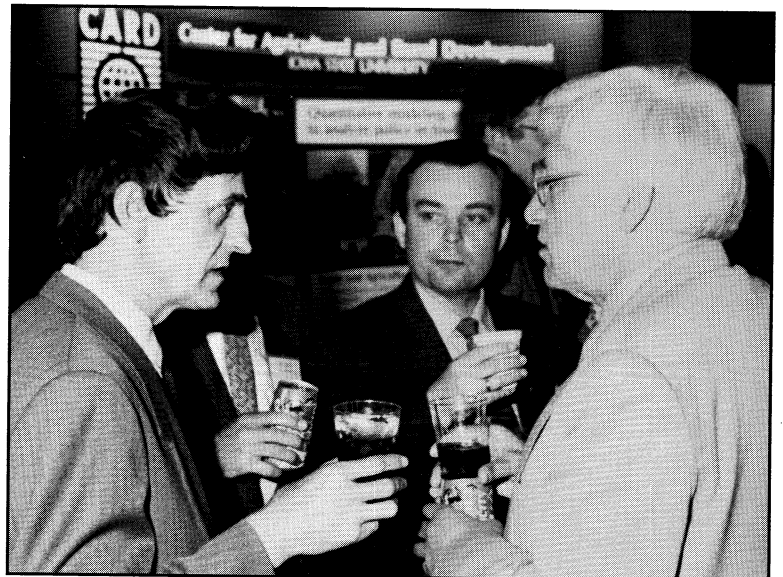
Cooper Evans, special assistant to President Bush on agricultural trade and food assistance.



During a break, the lobby of the Scheman Building serves as a gathering place for more than four hundred symposium participants.



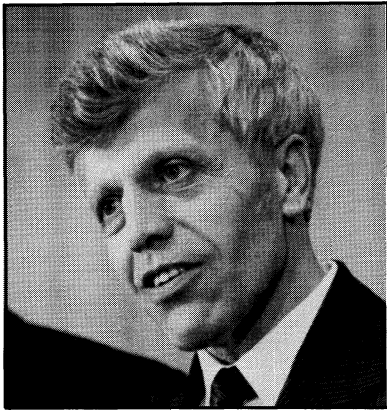
Victor Danilov, academician, Institute of History, USSR Academy of Science, Moscow.



Visiting Soviet farmers speak with Igor Uskov (right), director of the Agrophysics Institute, Leningrad.



David Topel, dean of the ISU College of Agriculture and director of the Agriculture and Home Economics Experiment Station.



Ivan Skiba, chief of the Agrarian Department, Central Committee of the Soviet Communist Party.



Victor Nazarenko, director of the All-Union Institute for Agricultural Information, Technology, and Economic Studies, Moscow.



Symposium participants listen, via headphone, to the simultaneous translation of a Soviet presentation.

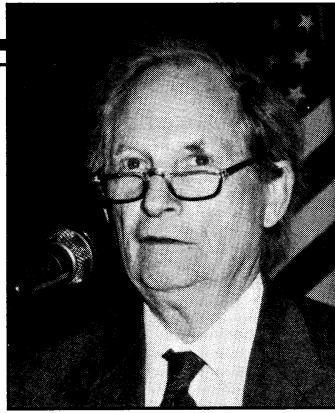
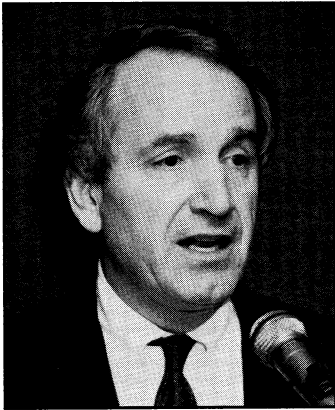


In giving an original oil painting to Iowa Governor Terry Branstad, President Alexander Nikonov (*left*) of the Lenin All-Union Academy of Agricultural Sciences describes Soviet gratitude for Iowa's aid and assistance spanning more than half a century.



VASKhNIL President Alexander Nikonov (*left*) and Iowa State President Gordon Eaton congratulate one another after expanding the ISU-VASKhNIL exchange to include commercial activities.

Tom Harkin,
U.S. senator
from Iowa.



D. Gale Johnson,
Eliakim Hastings Moore
Distinguished Service
Professor of Economics,
University of Chicago.



Michael Reagen,
president of the
Greater Des Moines
Chamber of Commerce
Federation.



As Paul Fitzgerald of the USDA Agricultural Research Service looks on, Vladimir Krivchenko (*left*), director of the Leningrad Plant Production Institute, greets Abe Epstein, chair of the ISU Department of Plant Pathology.

Marshall Goldman,
associate director of
the Russian Research
Center at Harvard and
Kathryn Wasserman
Davis Professor of
Soviet Economics at
Wellesley College,
Massachusetts.



A late-afternoon buffet includes a variety of Russian-style sausages prepared by ISU's Meat Export Research Center. Among those who made the buffet possible are (*from left*) Dennis Olson, ISU professor of animal science and food technology; Katherine Farley, Chilewich and Sons Company; Gary Kohake, Farmland Foods; and Sev Johnson, ISU professor of animal science.

Economic Reorganization

Victor Nazarenko, director of the Institute of Information and Technology, Moscow, identified changes needed for a future in which "we should experience a new emphasis on capital inputs [that has] not been appropriate in our current system."

He also noted that not all Soviet farmers want to be private farmers, and that the enthusiasm for agricultural reform varies among republics. A short-term strategy for growth is to make collective and state farms more democratic, efficient, and self-sufficient, he said. Each region should create a structure that deals with its needs.

Director Nazarenko spoke of a "bridge" to a market economy, saying that moving to a freer market will involve painful transitions, especially for those in poorer areas that are heavily subsidized. He spoke of a "regulated market economy" that eventually will replace the system in which subsidies have grown from 70 billion rubles in the 1970s to current levels of 100 billion per year. (The official budget for defense is 70 billion rubles per year.)

(In Soviet agriculture,) input industries are relatively well developed, but capacity for storage, processing, and marketing is inadequate, resulting in large losses.

Victor Nazarenko

Nazarenko described an imbalance among different parts of the Soviet agricultural economy. Input industries are relatively well developed, but capacity for storage, processing, and marketing is inadequate, resulting in large losses. Mentioning the possibility of converting some defense facilities for use in the agricultural sector,

he said that the Soviet Union has little experience with such conversions, so this area offers possibilities for joint ventures.

Change Brings New Problems

Stan Johnson, director of the Center for Agricultural and Rural Development (CARD) at Iowa State University, spoke of the massive scope of institutional change under way in the Soviet Union. This has created new problems for Soviet agriculture—problems such as how to protect income, how to manage and spread risk, and what incentives to offer producers who must take the risks.

The introduction of a convertible currency is important for the Soviet Union, Professor Johnson said, but this move alone will not solve the more complicated problems such as the cost of agricultural subsidies and the country's budget deficit. Research should be aimed at guiding policymakers toward a package of policies, with researchers providing projections of the impact of various reforms. Johnson also pointed out how important access to good information is to farmers who are not accustomed to making the decisions that are made in a freer economy.

Karl Skold, research associate at CARD, shared observations gained while spending 1989 in the USSR as part of an ISU-VASKhNIL junior scientist exchange. He described what was occurring in the Stavropol region during his stay and said that farm management and information dissemination need strengthening.

Soviet agriculturalists must realize that technology is only one part of entrepreneurial success, he said. People in the Stavropol region have entrepreneurial spirit, but they need a structure that rewards that spirit. He also noted that the traditional social contract that the Soviet

Union has had with its citizens—that all will be employed—is an important consideration during reform.

Better Incentives, Data Needed

Karen Brooks, professor of agricultural and applied economics at the University of Minnesota, recently had spent time in Lithuania as part of an exchange program. She expressed particular concern about the Soviet economic situation, saying that there is no consensus yet about what kind of system will replace the planned economy. She added that incentives for productivity need to be improved and that people must have the means to respond to incentives.

Professor Brooks said that the United States can be valuable to the Soviet Union by helping to strengthen the data bases and the analytical framework available to Soviet policymakers. The more successful the Soviet Union is, she said, the more successful the rest of Eastern Europe will be. The United States has much to gain from relations with a strengthened Eastern Europe. She suggested that the United States should respond to these needs and opportunities by pooling knowledge to help the Soviet Union evaluate different reform programs. She advocated involvement from the public and private sectors and from multinational organizations.

Ken Gray used an analysis of the dramatic changes occurring in Poland to suggest strategies the Soviet Union might follow. Mr. Gray, chief of the Centrally Planned Economies Branch of the Economic Research Service, noted disagreement about whether the “shock therapy” being applied in Poland is appropriate for the USSR. He also described the situation in China, saying that the growth following reform there has slowed as availability of inputs has become more critical than the original gains in efficiency. He noted that Poland’s convertible currency was important to that country’s access to inputs.

*One basic challenge is to broaden
Soviet understanding of the economic concepts
that underlie freer markets.*

Ken Gray

One basic challenge, Gray said, is to broaden Soviet understanding of the economic concepts that underlie freer markets. Changes now being discussed and implemented run contrary to the social and economic norms that have defined the lives of Soviet citizens for decades.

Plant Breeding, Genetics, and Crop Production

In opening the session on plant breeding, Iowa State University professor of agronomy Ken Frey heralded a new age of opportunity. "With new knowledge being developed from research on plant molecular biology, scientists are on the threshold of a new, almost explosive, capability to develop genetic technology. Crops will be remade; new plant products will emerge; plant varieties will tolerate biotic and abiotic stresses," he said.

Vladimir Krivchenko, director of the Plant Production Institute, Leningrad, described his institute as the only scientific body in the USSR that carries out the collection, preservation, and study of the world's genetic resources on a planned basis. Close to 400,000 accessions maintained at the institute represent plant resources from all countries. Exchanging seed and plant material with scientific institutions and seed companies to enrich the world collection is one institute objective, he said. Another is maintaining and organizing such material for long-term storage. Studying the gene pool of promising material in order to provide breeding centers with plants having commercially valuable traits also is an institute objective.

Research Needs

Director Krivchenko cited a need for further investigation in several areas to meet the institute's objectives. Express methods need to be developed for determining seed viability and for drying seeds. Seed-aging diagnostics need to be developed. Technologies are needed for progeny multiplication with due regard to the mode of pollination and principles of taking an average sample for long-term storage.

Ray Clark, research leader and coordinator of the ISU Plant Introduction Station, presented an overview of the establishment and structure

of the National Plant Germplasm System (NPGS) and its four regional plant introduction stations. He described funding sources, budgets, facilities, and germ plasm collections. The role of ISU's North Central Regional Plant Introduction Station particularly was emphasized.

"Through our [ISU's] association with the NPGS, our unit shares passport, evaluation, inventory, germination, and distribution data with other germ plasm maintenance sites and interested research scientists," he said. "We look forward to the opportunity to share plant germ plasm and personnel between our two national plant germ plasm systems."

Vseovold Vitkovski, deputy director of the Plant Production Institute, Leningrad, discussed the preservation, study, and use of fruit crop germ plasm. He described the Soviet program in which 20,000 varieties of fruit crops are grown at twelve experiment stations. He noted that developing fruit crop varieties is time-consuming and expensive, partly because collections must be maintained in live condition. It is important to develop new labor- and money-saving measures for plant resource preservation, he said.

Exchange Possibilities

Richard Shibles, professor of agronomy at Iowa State University, discussed five areas of potential mutual exchange. He noted that a team of ISU faculty members identified these areas for cooperation after a visit to the southern branch of VASKhNIL in the Soviet Ukraine. The five areas are plant breeding (in particular, cold tolerance in maize and soybeans), sustainable agriculture, forage production and quality, biotechnology, and intensive language study. Professor Shibles noted that the Ukrainians are studying nontraditional forage species that may be of interest to the United States, and ISU has developed an artificial

rumen that may be useful to Soviet scientists.

John Pesek, head of the ISU Department of Agronomy, briefly reviewed fifty years of crop-production and plant-breeding history. He praised Soviet Scientist N. I. Vavilov, saying that his early collection of germ plasm established a basis and model for today's germ plasm repositories. He also noted that our understanding of the soil resource base has roots in Soviet scholarship. In discussing chemical use in agriculture, he noted that inadequate consideration has been given in the past to the unintended effects of agricultural chemicals. He said that governments must evaluate the effect of domestic agricultural policies and international agricultural policies and how they influence food supplies and farmers' choices of environmentally benign practices.

Professor Pesek said, "There is an urgency

for the USA and the USSR to [lead] in germ plasm collection and preservation. We should also [enlist cooperation from] all other countries that either have or may use germ plasm." He

"There is an urgency for the USA and the USSR to [lead] in germ plasm collection and preservation. We should also [enlist cooperation from] all other countries that either have or may use germ plasm."

John Pesek

concluded with a reminder that sharing information and materials can enhance the efficiency with which new technology is developed.

Veterinary Science and Animal Health

Soviet veterinary medicine has gone through some hard times, according to Georgy Koromyslov, director of the All-Union Institute for Experimental Veterinary Science. In addition to imprisonment of some well-known scientists, Joseph Stalin's policies of collectivization included gathering together large numbers of livestock, which resulted in large-scale outbreaks of disease. Nonetheless, Director Koromyslov cited Soviet accomplishments in areas such as artificial insemination and parasitology, as well as successes in prevention and eradication of contagious diseases.

According to Koromyslov, current Soviet research interests focus on molecular biology; development, production, and sales of vaccines; animal disease diagnosis; methods of animal disease surveillance and reporting; and development of disease-free stocks. All of these are areas in which significant opportunities exist for joint work between Soviet and U.S. researchers.

In molecular biology, researchers in the USSR and the United States are investigating mutual problems that could benefit from coordinated development of gene probes, monoclonal antibodies, diagnostic kits, and genetically engineered vaccines.

Georgy Koromyslov

In molecular biology, Koromyslov noted, researchers in the USSR and the United States are investigating mutual problems that could benefit from coordinated development of gene probes, monoclonal antibodies, diagnostic kits, and genetically engineered vaccines. Vaccines against mycotic and protozoan diseases are more

advanced in the USSR, he observed, but vaccines against viral diseases are more advanced in the United States. Koromyslov emphasized the importance of licensing, production, and sales of vaccines between the USSR and the United States, as well as work on vaccines that will assist developing countries.

Disease Reporting a Priority

Developing better disease reporting is a priority in the USSR, Koromyslov said, and there are opportunities for U.S. epidemiologists to join in development of surveillance and reporting programs. Monitoring low-level radiation is one area of expertise in the USSR that could benefit U.S. researchers. He emphasized that veterinary research is an area of critical interest in the USSR. The Soviets welcome cooperation and exchanges of research personnel and information.

The panel discussed two existing veterinary exchange programs under way involving the American Veterinary Medical Association and the Institute for Experimental Veterinary Medicine. Other potential areas for cooperation include teaching exchanges, U.S. lecturers in the USSR, and a symposium of veterinary administrators.

Specific areas of common interest identified were (a) large-scale disease control programs, (b) mass vaccination programs, (c) animal disease diagnosis, (d) animal disease eradication, and (e) animal health products standardization and regulation. The panel also suggested methods to organize and deliver an intercontinental veterinary network. These included (a) organization of veterinary services, (b) joint production of veterinary products, (c) common regulation of veterinary products, and (d) trade of veterinary products.

The group concluded, "The Soviet Union has targeted some very important issues in their practice of veterinary medicine. American

pharmaceutical companies would do well to make a strong effort at encouraging trade with the USSR."

Animal and Meat Science

Scientists in the USSR are looking more closely at the relationship between diet and disease, according to Joseph Rogov, director of the Institute of Applied Biotechnology, Moscow. In the past two centuries, Director Rogov said, theories of nutrition emphasized a balanced diet, but fiber was not considered part of the balance. Food technology was geared toward the purification of nutrients at the expense of fiber ("ballast compounds") in the diet. Similar tendencies in meat processing led to removal of connective tissues. These processes resulted in the appearance, particularly in developed countries, of so-called "diseases of civilization," including diseases of the heart, vascular system, and intestines, as well as diabetes, kidney disease, and some types of cancer.

Researching the Role of Fiber

Research in the USSR has demonstrated that collagen and elastin have significant roles in meat products similar to the healthy benefits of plant fiber. It is necessary, Rogov said, to shift the attention of scientists and specialists from the tendency toward maximum purification of edible raw material to processing in a more natural form with the whole composition of meat fibers. Another area of emphasis in the USSR is toward "structured foods" that provide maximum contact with digestive enzymes. Products for medical nutrition are receiving attention in the USSR, Rogov said. Mathematical modeling has been applied to provide foods based on the specific medical and biological needs of patients such as burn victims.

Electrical stimulation of meat is another area under study in the USSR, he said. Stimulation allows use of intensive chilling and prevents rigor mortis at defrosting. The relationship of pH levels in meat to meat quality also has been

studied. Based on those investigations, it is now recommended that meat with a high final pH be used for freezing, quick-frozen ready-to-cook products, and finished products.

The USSR has conducted several studies of blood protein. The technology of texturizing blood components by adding calcium has been developed. Using this technology on blood plasma, Soviet scientists have created spongelike "plasma cheese" that can be added to meat products. Soviet meat scientists also are interested in the use of microwaves. According to Rogov, development of microwave technology could reduce the nutrient losses caused by pasteurization and sterilization techniques now being used.

Iowa's place in the U.S. livestock industry means that the state can provide technical advice and be a good trading partner for the USSR.

Dennis Olson

Dennis Olson, director of the Meat Export Research Center (MERC) at Iowa State University, agreed that the USSR and Iowa have research and commercial interests in common. Olson said that Iowa's place in the U.S. livestock industry means that the state can provide technical advice and be a good trading partner for the USSR. The USDA conducts animal science research at regional centers that specialize in areas such as breeding, meat science, nutrition, muscle biology, and reproduction. Iowa State also conducts research in these areas, some in conjunction with the USDA, Olson noted. That expertise, Iowa's location and prominence in cattle and hog production, and MERC's industry

contacts provide a basis for technical assistance to help improve Soviet productivity.

In the long term, the goal of such cooperation is to help the Soviet Union achieve production levels that meet its growing demand for meat. In the short term, Olson said, it might be more efficient to import meat from the United States than to import the grain to produce more meat in the USSR. Economic models that can predict the break-even prices for meat versus grain importation are examples of ISU research efforts that can be of use in Soviet production.

Benefits to Both Nations

In remarks from the panel, Jim Mullins, a representative of the National Cattlemen's Association, said knowledge could be exchanged between the United States and the USSR about production systems, automation of slaughter methods, and development of products not available in each country. Severin Johnson, trade liaison for MERC, noted that the United States could provide information about several research areas being explored in the USSR, including electrical stimulation, pH problems, and sausage production; technologies from the USSR such as inclusion of nontraditional products (e.g., offal and plasma) in meat products would be helpful to the U.S. industry.

Breeding is another area where cooperation can be mutually beneficial, Mr. Mullins said. Both countries may possess breeds of value to

the other country. Exchanges of semen, frozen embryos, and live animals could be made.

Development of products and technologies for meat processing was another area for potential cooperation, according to Mr. Johnson. To improve trade between the countries, the United States needs more information about typical Soviet meat products, such as kielbasa. That information should include tastes preferred, ingredients allowed, and the nature of transportation and distribution systems.

Technology for canned and shelf-stable products may be helpful in the USSR to assure food quality to consumers in less central areas, Johnson noted. David Meeker, vice president for research and education of the National Pork Producers Council, said quality-assurance programs have been developed in the United States to prevent contamination of livestock with residues and pesticides. This would preclude the difficulty of removing them during processing.

Tentative proposals for an exchange were drafted by the working group. The group suggested a trip to the USSR in May 1991 by two American specialists in fresh and processed meats, one animal breeder, and one commercial organization representative. A Soviet return exchange the following month would bring two meat scientists, one animal breeder, and one authority empowered to sign business agreements.

Agriculture and Rural Development

Good economic conditions lead to good social conditions, according to Luidmila Petrova, director of the Stavropol Agricultural Research Institute. The problems of developing a rural region in the USSR or the United States relate directly to those who produce agricultural products, she said.

Until the turn of the century, Director Petrova said, science was far ahead of practical application in the USSR because the peasants lacked the education to understand scientific changes. As university-educated agronomists began working on state and collective farms, administrative bureaucracy hindered the free exchange between scientists and farm workers.

(Today, Soviet) scientists are bringing in producers to help determine problems and produce the best scientific recommendations for individual farms.

Luidmila Petrova

Now scientists are bringing in producers to help determine problems and produce the best scientific recommendations for individual farms, she noted. Computer modeling is giving the farmer more information about such things as soil composition and the various technologies that can be applied on the farm. Regional models are being developed to analyze development issues. One model, INTERAGRO, evaluates such factors as regional population; industrial and agricultural production potential; different types of farm management and facilities; needs for additional services, such as product transport and animal and plant breeding; technological factors in the processing industry; and the best use of natural resources.

One key to success in rural development will be the education of farmers. Petrova noted that the USSR is examining a system now being implemented in the United States and Canada to improve farmer education. She added that education and extension activities are ways to increase farmer participation, improve agricultural productivity, and improve economic conditions in rural areas. Another would be to involve farmers in the computer modeling of agricultural resources and practices.

Rural Vulnerability

Richard McHugh, professor of economics with the ISU Center for Agricultural and Rural Development, called it natural in a healthy market system for some parts of the economy to grow faster than others. But when the economy slows down in rural markets, the more isolated areas are vulnerable to decline because there is no other base for withstanding the shocks.

The rural sector has been a slow-growing one for decades. What is unique about the 1980s is the series of shocks that hit rural communities. The farm crisis hit. Dramatic change in the industrial structure reduced employment in industries, such as manufacturing and mining, that were central to rural communities. The rise in the value of the U.S. dollar raised the cost of goods produced in rural communities, and exports declined. Countries such as those in the Pacific Rim began producing export goods cheaply. Materials used in manufacturing consumer goods changed, reducing demand for products of rural mining and manufacturing. More young people going to college and pursuing opportunities elsewhere increased the number of young leaving rural communities.

The price of public institutions per person increases proportionally with the decline in

population in a community, Professor McHugh said. Physical infrastructure also is more expensive. There also is a decline in private business infrastructure: banking, finance, wholesale, and retailing. Taking steps to improve the rural economy is justified to make use of resources in those areas, to guarantee opportunities for people who wish to live in rural areas, and to discourage congestion and depletion of resources caused by overmigration of rural populations to urban areas.

The Role of the Farmer

Most of the panel discussion focused on the role of the farmer in rural development. Panelists agreed that many problems in rural areas are similar in the USSR and the United States. Tom Dorr, president of Dorr's Pine Grove Farms, Marcus, Iowa, noted that emphasis on technological solutions, computers, and models may be misplaced. The key, he said, is to bring farmers into the discussion and to listen to what they need. Nor will education alone bring rural reform. Many American farmers are already well educated, Mr. Dorr noted, and the United States still has rural development problems.

All farmers have the same desire to produce food, take it to the consumer, and make a profit in the exchange, Dorr said. But regional efforts often are affected by federal economic policies that sustain inefficient producers and encourage the misuse of land resources. Those government

policies have changed little since the 1930s, he said.

Kathy Beery, rural development coordinator for the Iowa Department of Economic Development, said that another similarity between the USSR and the United States is that both must focus on the relationship between national programs and local decision making. In the United States, she said, there is no cohesive federal agency for rural development. In Iowa, communities and counties are taking the initiative for leadership. There is a need to pool resources and cooperate.

(One) similarity between the USSR and the United States is that both must focus on the relationship between national programs and local decision making.

Kathy Beery

Paul Lasley, ISU professor of sociology, noted that those who implement technology often fail to consider its implications. The Soviets were cautioned not to abandon collective farms without a lot of thought. Collective farms are not only a production unit, panelists noted, but a social entity. They support 3,000 people on a land area that in Iowa would be worked by five farm families. Where will the rest of those people go?

Agricultural Management, Training, Information, and Extension Systems

Dmitri Strebkov, director of the Soviet Institute of Electrification in Agriculture, came to Ames to ask for help in addressing the formidable challenges that face a Soviet agricultural system struggling to adopt the ways of a market economy.

Director Strebkov listed the challenges he considers to be the most important. Roads, housing, and social programs for rural Soviet residents are inadequate. The transition to private ownership in rural villages is likely to be difficult. There are no effective extension programs. The food supply is often inadequate and sometimes unsafe. Soviet farms and homes need new, sustainable sources of energy. Use of new information technology such as videos, satellites, and television needs to be expanded.

Soviets Need Effective Extension

In response, Iowa State University Extension economist Mark Edelman suggested considering the development of a Soviet extension system, adding that ISU specialists could help in its development. Professor Edelman said the Soviets need a technical assistance system that is vertically integrated from raw material to retail outlet. A "cluster concept" approach would use experts from U.S. agribusinesses and universities to develop model pilot projects in the Soviet Union.

Don Larson, president of Larson Systems, a satellite communications company located in Ames, noted that satellites, computerized farm equipment, and other agricultural technology could be used to assist pilot projects. Tools of this type also could vastly improve the efficiency of Soviet agriculture while helping farmers protect the environment. Edelman agreed, saying that telecommunications networks could provide

communication between the two countries. The networks could be used to conduct meetings, conferences, and instructional programs, he suggested.

The Soviets need a technical assistance system that is vertically integrated from raw material to retail outlet.

Mark Edelman

He also noted that ISU Extension could assist in identifying host families for as many as 2,000 Soviet agriculturalists who would be part of an exchange program advocated by Soviet President Mikhail Gorbachev. "I believe ISU Extension is uniquely qualified to facilitate such an exchange program," Edelman said. A survey of Iowa extension field staff indicates they are willing and interested in such efforts, he noted.

Final Plea: Listen to the People

New educational and extension programs could teach Soviet workers the economic concepts and business practices related to a free-enterprise system, noted ISU economist Roger Ginder. Soviet policymaking officials, meanwhile, need to be persuaded to consider the ideas and opinions of the Soviet people, he said.

Professional farm manager Tom Hertz agreed that many of the concepts of a free-enterprise system are foreign to the Soviets. One such idea is the very concept of professional farm management. Mr. Hertz, of Nevada, Iowa, noted that Soviet and U.S. agriculture could benefit by placing more trust in middle managers and

consultants.

California extension specialist Tim Wallace pointed out that new education programs, along with management and information systems, must be designed to fit the actual needs of the Soviet people. "We have to make certain that we

ask the right questions and that we use a discovery method, not a preaching method, when working with them. Whatever programs come about must be truly Soviet programs, not American programs forced upon them," he said.

New Initiatives for Scientific and Economic Cooperation with the Soviet Union

Politicians are encouraged by the reforms in the Soviet Union, but they are troubled by uncertainty over the future of the Baltic republics and other issues. This was the message from Cooper Evans, special assistant to President Bush on agricultural trade and food assistance and former U.S. congressman.

Cooperation between the United States and the Soviet Union has gained momentum since Soviet academicians and Iowa State University economist Earl Heady first began working together more than three decades ago, he said. But

"Many [U.S. officials] believe that a successful agriculture is the most important aspect to Soviet stability. We are promoting a program of cooperation."

Cooper Evans

now, tensions over the republics' moves toward independence bring a need for caution. "Now is not the time for new commitments," Mr. Evans cautioned. American officials also are concerned about the cost of technical and educational exchanges. Evans said some officials favor technical exchanges, while others think student exchanges

with the Soviet Union may be more effective.

Despite those concerns, the dynamic changes in the Soviet Union make it obvious that the Soviets are serious about reform. Evans said officials here recognize the importance of agricultural development in the Soviet Union. "Many believe that a successful agriculture is the most important aspect to Soviet stability. We are promoting a program of cooperation," he said.

Evans reviewed a list of earlier agricultural exchanges:

- In 1972, the first long-term grain sale agreement was signed.
- A 1973 agreement established a framework for government and private initiatives in Soviet agriculture.
- Additional research and technical exchanges focused on forestry.
- Food processors sponsored technical exchanges and conferences.
- Commercial firms established model farms in the Soviet Union.
- A 1,000-student exchange was initiated at the December 1989 Malta summit.

Cooperative work between U.S. and Soviet universities is exciting, he said. The ISU-VASKhNIL agreement holds promise for exceptional benefits for all participants.

Related Readings

The following publications may be ordered from CARD Publications, Center for Agricultural and Rural Development, 578 Heady Hall, Iowa State University, Ames, Iowa 50011; tel. (515) 294-7519. Order by title and publication number, where applicable.

Annual Report

"ISU-VASKhNIL Agreement Annual Report, 1989." Center for Agricultural and Rural Development and College of Agriculture, Iowa State University.

USSR Policy Papers

"The History and Modern Development of Soviet Agriculture." Victor Danilov. USSR Policy Paper 90-UPP1. May 1990.

"Veterinary Science in the USSR: Current State and Prospects." Georgy Koromyslov. USSR Policy Paper 90-UPP2. May 1990.

"The World Genepool at the N. I. Vavilov Institute of Plant Industry and Its Utilization in Agriculture." Vladimir Krivchenko and Vseovold Vitkovsky. USSR Policy Paper 90-UPP3. May 1990.

"Agricultural Economics in the USSR: Trends of Development." Victor Nazarenko. USSR Policy Paper 90-UPP4. May 1990.

"Agricultural Policy in the Soviet Union." Victor Nazarenko. USSR Policy Paper 90-UPP5. May 1990.

"An Information System for the USSR Agro-Industrial Complex." Victor Nazarenko. USSR Policy Paper 90-UPP6. May 1990.

"An Overview of the 1990 Work Plan." Victor Nazarenko. USSR Policy Paper 90-UPP7. May 1990.

"Agrarian Reform in the USSR and Its Scientific Support." Alexander Nikonov. USSR Policy Paper 90-UPP8. May 1990.

"Main Tendencies in Meat Science." Joseph Rogov. USSR Policy Paper 90-UPP9. May 1990.

"Some Aspects of USSR Agrarian Policy." Ivan Skiba. USSR Policy Paper 90-UPP10. May 1990.

"Rural Energy Systems and Ecology." Dmitri Strebkov. USSR Policy Paper 90-UPP11. May 1990.

"Agricultural Production and the Environment." Igor Uskov. USSR Policy Paper 90-UPP12. May 1990.

Conference Speakers, Panelists, and Moderators

Soviet Union

Victor Danilov is an academician with the Institute of History, USSR Academy of Science, Moscow.

Georgy F. Koromyslov, academician, is director general of Veterinary Research and Services and Director of the All-Union Institute for Experimental Veterinary Medicine, Moscow.

Vladimir I. Krivchenko is director of the Vavilov All-Union Institute of Plant Industry, Leningrad.

Victor Nazarenko is director of the All-Union Institute for Agricultural Information, Technology, and Economic Studies, Moscow.

Alexander A. Nikonov is president of the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL), and is regarded as Soviet General Secretary Mikhail Gorbachev's most important academic adviser on agricultural economics.

Luidmila Petrova is director of the All-Union Institute of Industrial and Agricultural Production, Stavropol.

Joseph Rogov, academician, is director of the Institute of Applied Bio-Technology, Moscow.

Ivan Skiba is chief of the Agrarian Department, Central Committee of the Soviet Communist Party.

Dmitri Strebkov is director of the Research Institute of Electrification in Agriculture, Moscow.

Igor B. Uskov is director of the All-Union Agrophysical Research Institute, Leningrad.

Vseovold L. Vitkovski is associate director of the Vavilov All-Union Institute of Plant Industry, Leningrad.

United States

Kathy Beery is rural development coordinator at the Iowa Department of Economic Development, Des Moines.

George Beran is professor of veterinary microbiology and preventive medicine at Iowa State University.

Terry E. Branstad is serving his third term as Iowa's 39th governor.

Karen Brooks is assistant professor of agricultural and applied economics, University of Chicago.

Verle Burgason chairs the board of the *Ames Daily Tribune*.

Barbara Burton serves as assistant to the director of international programs, Iowa State University Extension Service.

Richard Carlson is professor of agronomy at Iowa State University.

Lauren Christian is a professor of animal science at Iowa State University and serves as a pork industry representative in various other capacities.

John Chrystal, banker and family farmer, is a longtime leader in U.S.-Soviet relations, consulting numerous times with top Soviet officials on agriculture and international trade.

Raymond Clark is research leader and coordinator of the USDA North Central Region Plant Introduction Station, Iowa State University.

Dale M. Cochran is Iowa secretary of agriculture and land stewardship.

Arthur Davis is a partner in the Des Moines law firm of Davis, Hockenberg, Wine, Brown, Koehn & Shors, P.C.

Thomas C. Dorr is president of Dorr's Pine Grove Farm Company, a 2,000-acre, family-owned grain farm near Marcus, Iowa.

Gordon Eaton was, at the time of this conference, the president of Iowa State University. He is now director of the Lamont-Doherty Geological Observatory, Columbia University.

Mark Edelman is associate professor of economics and agriculture and public policy at Iowa State University.

Cooper Evans is special assistant to U.S. President Bush for agricultural trade and food assistance.

Robbins Fischer is president of Soypro International and numerous related international export and trade businesses based in Cedar Falls, Iowa.

Ken Frey is professor of agronomy and a Charles F. Curtiss Distinguished Professor in Agriculture at Iowa State University.

Roger Ginder is professor and extension specialist of agribusiness management, Department of Economics, Iowa State University.

Marshall Goldman is a Kathryn Wasserman Davis Professor of Soviet Economics at Wellesley College, Wellesley, Massachusetts.

Ken Gray is chief of the Centrally Planned Economies Branch, Agriculture and Trade Analysis Division, Economic Research Service, USDA.

George Hallberg is supervisor of environmental geology for the Geological Service Bureau of the Iowa Department of Natural Resources (IDNR).

David Hammond is the interim state program leader for community resource development programs of Iowa State University Extension Service.

Tom Harkin is a U.S. senator representing Iowa, serving on the Senate committees of Appropriations, Agriculture, Labor and Human Resources, and Small Business.

Nolan Hartwig is professor-in-charge of extension veterinary medicine at Iowa State University.

Jerry Hatfield is laboratory director of the National Soil Tilth Laboratory, USDA, located at Iowa State University.

Thomas Hertz is vice-president of Hertz Farm Management, Inc., and president of Hertz Agricultural Investment Services, Inc., Nevada, Iowa.

D. Gale Johnson is an Eliakim Hastings Moore Distinguished Service Professor of Economics at the University of Chicago.

Stanley R. Johnson is professor of economics and director of the Center for Agricultural and Rural Development (CARD) at Iowa State University.

Gene Johnston is managing editor of Meredith Corporation's *Successful Farming* magazine.

Dennis Keeney is director of the Leopold Center for Sustainable Agriculture at Iowa State University.

M. Douglas Kenealy is professor of animal and dairy science at Iowa State University.

Allen Knapp is director of the Seed Science Center and an extension seed scientist at Iowa State University.

Theodore Kramer is professor and chairman of the Department of Veterinary Microbiology and Preventive Medicine, College of Veterinary Medicine, Iowa State University.

Paul Lasley is associate professor of sociology, Iowa State University.

Glenn Lovig is executive vice president of the Iowa Association of Electric Cooperatives.

John McCarthy is senior program specialist, American Veterinary Medical Association, Governmental Relations Division.

John McDonald, president of the Iowa Peace Institute, Grinnell, is a lawyer, diplomat, former international civil servant, and development expert.

Richard McHugh was, at the time of this conference, the head of the Rural and Economic Development Policy Division, ISU Center for Agricultural and Rural Development. He is now director of the Center for Economic and Management Research, University of South Florida, Tampa.

David Meeker is vice-president for research and education of the National Pork Producer Council (NPPC).

William H. Meyers is professor of economics and associate director of the Center for Agricultural and Rural Development (CARD) at Iowa State University.

Jim Mullins is an Iowa farmer and chair of the National Cattlemen's Association Committee for Trade.

Dennis Olson is director of the Meat Export Research Center (MERC), Iowa State University.

John Pesek is a Charles F. Curtiss Distinguished Professor in Agriculture and head of the agronomy department at Iowa State University.

Merlin Plagge is president of the Iowa Farm Bureau Federation, the state's largest general farm organization.

Michael Reagen is president of the Greater Des Moines Chamber of Commerce Federation, the metro community's lead business voice on urban economic development issues.

Ricardo Rosenbusch is professor at the Veterinary Medical Research Institute at Iowa State University.

Bruce Roskens is manager of crop production and development for the Quaker Oats Company, Cedar Rapids.

Max Rothschild is professor of animal science at Iowa State University.

Vaughn Seaton is professor of veterinary pathology and head of veterinary diagnostic laboratories at the College of Veterinary Medicine, Iowa State University.

Richard Shibles is professor of agronomy at Iowa State University.

Karl Skold was, at the time of this conference, a postdoctoral research associate at the Center for Agricultural and Rural Development (CARD), Iowa State University. He is now a commodity analyst with the Quaker Oats Company, Chicago.

Ole Stalheim is a retired veterinary medical officer from the National Animal Disease Center, USDA, in Ames, Iowa.

Eugene Takle is professor of agronomy, Iowa State University.

S. Elwynn Taylor is professor of agronomy and extension agricultural climatologist, Iowa State University.

David Topel is dean of the College of Agriculture and director of the Agriculture and Home Economics Experiment Station, Iowa State University.

Tim Wallace is an agriculturalist with the Cooperative Extension Service and Department of Agricultural and Resource Economics at the University of California, Berkeley.

Al Wanous is consultant to the vice president for public and international affairs, Land O'Lakes, Inc.

Conference Sponsors

Iowa State University
Greater Des Moines Chamber of Commerce Federation
Iowa Department of Agriculture and Land Stewardship
Iowa Department of Economic Development
Midwest Agribusiness Trade Research and Information Center (MATRIC)
International Network on Trade (INTERNET)
Iowa Farm Bureau Federation
Iowa Corn Promotion Board

ISU-VASKhNIL Steering Committee Members (1989-1990)

Ken Frey, *Professor of Agronomy*
Allen Knapp, *Professor of Agronomy*
Ted Kramer, *Chair and Professor, Department of Veterinary Microbiology and Preventive Medicine*
Bruce Menzel, *Chair and Professor, Department of Animal Ecology*
Ricardo Rosenbusch, *Professor of Veterinary Microbiology and Preventive Medicine*
Max Rothschild, *Professor of Animal Science*
Carl Tipton, *Professor of Biochemistry*

Ex Officio Member

Stan Johnson, *Professor of Economics and Director, Center for Agricultural and Rural Development*

Iowa State University
CARD Publications
Center for Agricultural and Rural Development
578 Heady Hall
Ames, Iowa 50011