

THE WORLD BANK GROUP ARCHIVES

PUBLIC DISCLOSURE AUTHORIZED

Folder Title: President Wolfensohn - Briefing Book for President's Meetings and Events - Luncheon Meeting - Commission on International Trade, Development and Cooperation - May 27, 1997

Folder ID: 30487921

Series: Meeting and event briefing materials

Dates: 02/01/1997 – 05/27/1997

Subfonds: Records of President James D. Wolfensohn

Fonds: Records of the Office of the President

ISAD Reference Code: WB IBRD/IDA EXC-13-10

Digitized: 07/25/2025

To cite materials from this archival folder, please follow the following format:
[Descriptive name of item], [Folder Title], Folder ID [Folder ID], ISAD(G) Reference Code [Reference Code], [Each Level Label as applicable], World Bank Group Archives, Washington, D.C., United States.

The records in this folder were created or received by The World Bank in the course of its business.

The records that were created by the staff of The World Bank are subject to the Bank's copyright.

Please refer to <http://www.worldbank.org/terms-of-use-earchives> for full copyright terms of use and disclaimers.



THE WORLD BANK

Washington, D.C.

© International Bank for Reconstruction and Development / International Development Association or

The World Bank

1818 H Street NW

Washington DC 20433

Telephone: 202-473-1000

Internet: www.worldbank.org

PUBLIC DISCLOSURE AUTHORIZED



30487921

R2002-036 Other #: 37 Box #: 186487B

President Wolfensohn - Briefings Books for Presidents Meetings - Meeting Material
Luncheon Meeting - Commission on International Trade, Development and

DECLASSIFIED
WBG Archives

Luncheon Meeting: Commission on
International Trade, Development and
Cooperation

Tuesday, May 27, 1997
1:00 - 2:00 p.m.
JDW's Private Dining Room

Archive Management for the President's Office

Document Log

Reference # : Archive-01437

1288

Edit

Print

A. CLASSIFICATION

☒ Meeting Material
☐ Trips
☐ Speeches

☐ Annual Meetings
☐ Corporate Management
☐ Communications with Staff

☐ Phone Logs
☐ Calendar
☐ Press Clippings/Photos

☐ JDW Transcripts
☐ Social Events
☐ Other

B. SUBJECT: LUNCHEON MEETING: COMMISSION ON INTERNATIONAL TRADE, DEVELOPMENT AND COOPERATION (B) (N) (Total:12)
VENUE: JDW'S PRIVATE DINING ROOM
CONTACT: FLEUR / MCCALLA @ 85028
WB ATTENDEES: JDW*, {KOCH-WESER-NOT ATTENDING}, {SERAGELDIN-not attending}, MCCALLA*, STIGLITZ*, J. SHIRAZI* {FOR SEVERINO}, HANY*
EXTERNAL ATTENDEES: (5) <INVITED BY MCCALLA> // SECURITY PASSES ALREADY REQUESTED BY FLEUR
MR. WHITNEY MACMILLAN, CHAIRMAN EMERITUS, CARGILL, CHAIR OF THE COMMISSION
MR. JOHN COSTELLO, PRESIDENT, CITIZENS NETWORK FOR FOREIGN AFFAIRS
MR. G. EDWARD SCHUH, DEAN, HUMPHREY INSTITUTE FOR PUBLIC AFFAIRS, UNIVERSITY OF MINNESOTA
MR. ROBERT THOMPSON, PRESIDENT & CEO, WINROCK INTERNATIONAL
DR. RITA R. COLWELL, PRESIDENT OF THE UNIVERSITY OF MARYLAND BIOTECHNOLOGY INSTITUTE
DR. DALE E. HATHAWAY, DIRECTOR OF THE NATIONAL CENTER FOR FOOD AND AGRICULTURE POLICY (THE ORGANIZATION WHICH CONVENED THE COMMISSION) - TO BE CONFIRMED
MR. JOHN G. STOVALL, EXECUTIVE DIRECTOR OF THE COMMISSION - TO BE CONFIRMED
(B) MCCALLA // DUE: THURSDAY, MAY 22
(5/23) CIHAT (12)
EXC: HANY // ALI (4/1) (4/2)
Brief Includes Memo to Mr. Wolfensohn from Alex McCalla - May 10, 1997, entitled, "Luncheon Meeting with Commission on International Trade, Development and Cooperation, Tuesday, May 27 at 1:00 p.m. and tab:
- March 14 Letter from Ismail Serageldin
Publications:
1) "U.S. Interests in Economic Growth, Trade, and Stability in the Developing World"
2) "Development, Trade Expansion, and U.S. Agriculture: Policies for the 21st Century"
3) "The Crucial Role of International Agricultural Research"

DATE: 05/27/97

C. VPU

Corporate

- ☐ CTR
- ☐ EXT
- ☐ LEG
- ☐ MPS
- ☐ OED
- ☐ SEC/Board
- ☐ TRE

Regional

- ☐ AFR
- ☐ EAP
- ☐ ECA
- ☐ LAC
- ☐ MNA
- ☐ SAS

Central

- ☐ CFS
- ☐ DEC
- ☐ ESD
- ☐ FPD
- ☐ FPR
- ☐ HRO

Affiliates

- ☐ GEF
- ☐ ICSID
- ☐ IFC
- ☐ Inspection Panel
- ☐ Kennedy Center
- ☐ MIGA

D. EXTERNAL PARTNER

- ☐ IMF
- ☐ UN
- ☐ MDB/Other IO
- ☐ NGO
- ☐ Private Sector

- ☐ Part I
- ☐ Part II
- ☐ Other

E. COMMENTS:**File Location****Cleared By**

Hany Assaad

Date:

05/28/97

[View Update History](#)

OFFICE MEMORANDUM

MAY 11 1997

Int. 3720

DATE: May 10, 1997

TO: Mr. James D. Wolfensohn, EXC

THROUGH: Mr. Ismail Serageldin, ESDVP *IS*

FROM: Alex F. McCalla, AGRDR *AF McCalla*

EXTENSION: 85028

SUBJECT: **Luncheon Meeting with Commission on International Trade, Development and Cooperation, Tuesday, May 27 at 1:00pm**

Thank you for agreeing to have lunch with the Chair and some members of the Commission on International Trade, Development and Cooperation. As indicated in our letter to you of March 14 (copy attached), we feel this is an important report from an impressive group. The report clearly is consistent with our new thrust in Rural Development and it is especially strong in its support for research and especially the CGIAR.

Mr. Whitney MacMillan is a highly respected leader in the world agribusiness community, having served for almost 20 years as CEO of Cargill, Inc., the world's largest commodity trading company. There follows a brief note on the Commission's background and brief biographical sketches on those currently scheduled to attend which was prepared by John Stovall.

Commission Background

During the debate leading up to the 1996 Farm Bill, some observers of the U.S. agricultural policy scene sensed that the time was ripe to engage the leadership in a discussion about the stake U.S. agriculture has in this country's international affairs, particularly our economic interests in developing countries and emerging market economies. With this in mind, The National Center for Food and Agricultural Policy convened a distinguished group of leaders from the food and agricultural sector, along with former government officials and development and trade experts for a year-long examination of these issues. It was considered a somewhat risky venture since these issues had seldom been on the agenda of U.S. agriculture, except to oppose an initiative or program.

The Commission on International Trade, Development, and Cooperation not only recognized the importance to those issues, but surprisingly they called on the Congress to

increase spending on international affairs by \$2 billion. It has been said that this is the first time the agricultural sector has reached consensus about the role of U.S. economic aid in the post-Cold War period.

Whitney MacMillan, Commission Chair

Named Chairman Emeritus in 1995 after serving as CEO of the largest privately own corporation in the U.S., Cargill, Inc. A native of Minnesota, he joined Cargill as a general trainee in 1951. Served in the Vegetable Oil Division in San Francisco and Manila and the Grain Division in Minneapolis in various capacities. Elected in 1968 as Group Vice President, managing the Seed Division, the Salt Division and Cargo Carriers. Elected President in 1975, Chairman and CEO in 1976. Presently serves as director of Samson Paper Company, Seattle; Deluxe Corporation, St. Paul; Winrock International; CARE; U.S.-Japan Business Council and U.S.-Russia Business Council. Also participates as a member of the Investment and Services Policy Advisory Committee of the Office of the U.S. Trade Representative, the Trilateral Commission, the Hubert H. Humphrey Institute Advisory Committee and the National Advisory Board of the Museum of the Rockies, Bozeman and as trustee of the Mayo Foundation. Earned B.A. from Yale University.

Rita R. Colwell

President of University of Maryland Biotechnology Institute (since 1991) and President of the American Association for the Advancement of Sciences. Distinguished research background includes biotechnology, microbial biodiversity, marine and estuarine microbial ecology and release of genetically engineered microorganisms. Honors include the International Institute of Biotechnology Gold Medal awarded in 1990 and the Purkinje Medal for Achievement in Biological Sciences, Czechoslovakian Academy of Sciences in 1991. Author of 16 books, producer of an award winning film and author or co-author of more than 400 papers and articles, received B.S. and M.S. (genetics) from Purdue University and Ph.D. from the University of Washington.

John H. Costello

President and Co-Founder of The Citizens Network for Foreign Affairs (CNFA), an international development group dedicated to building export markets and stimulating global economic growth for the United States. Leads a coalition of more than 200 U.S. food and agribusiness groups committed to international economic development; the centerpiece of this initiative is CFNA's innovative public-private sector partnership program between U.S. agribusiness and the U.S. government, delivering more than \$230 million in technical and investment assistance to help restructure food systems in Russia and Ukraine. Has been directly involved in global growth and development for more than 20 years -- focusing on managing major international development organizations in

the U.S. and abroad. Most recently served as Chairman of the Advisory Committee on Voluntary Foreign Aid of the U.S. Agency for International Development. Earned B.A. in business from Syracuse University.

G. Edward Schuh

Dean, Hubert H. Humphrey Institute of Public Affairs, the University of Minnesota. From 1980 to 1987, served as Director of Agriculture and Rural Development, The World Bank, located in Washington, DC. Began as professor of agricultural economics at Purdue University from 1959 to 1979. While at Purdue, served as the first Director of the Center for Public Policy and Public Administration, 1977-78; a Program Advisor to the Ford Foundation in Brazil, 1966-72; the Senior Staff Economist on President Ford's Council of Economic Advisors, 1974-75; and as Deputy Under Secretary for International Affairs and Commodity Programs at the U.S. Department of Agriculture, 1978-79. From 1979 to 1984 was Professor and Head, Department of Agricultural and Applied Economics, University of Minnesota. Presides as chair of the Board for International Food and Agricultural Development (BIFAD), which advises the Administrator of the U.S. Agency for International Development. Earned B.S. degree from Purdue University, an M.S. degree from Michigan State University, and an M.A. and Ph.D. from the University of Chicago.

Robert L. Thompson

President of Winrock International, advancing its mission to reduce poverty and hunger worldwide through increasing agricultural productivity and rural employment while protecting the quality of the environment. From 1987 to 1993, served as Purdue University's Dean of Agriculture overseeing agricultural instruction, extension, research, international programs, and regulatory affairs. Worked additionally as a professor of agricultural economics from 1974 to 1993, focusing on agricultural trade policy, U.S. agricultural policy and world agricultural development. Served also as Assistant Secretary for Economics at the U.S. Department of Agriculture from 1985 to 1987 and as Senior Staff Economist for Food and Agriculture on the President's Council of Economic Advisers from 1983 to 1985. Has extensive international experiences and has completed long-term assignments in Denmark, Laos and Brazil. Has lectured, consulted or conducted research in more than 70 countries worldwide. Earned B.S. from Cornell University and holds an M.A. and Ph.D. from Purdue University.

Clifton R. Wharton, Jr. (possible)

Served as the Chairman and Chief Executive Officer of Teachers Insurance and Annuity Association and the College Retirement Equities Fund from February 1987 to January 1993. TIAA-CREF is the nation's largest pension system and the third largest U.S. insurance company. From 1978 to 1987, presided as Chancellor at the State University of New York (SUNY) System. From 1970 to 1978, served as President of

Michigan State University. Prior to 1970, spent 22 years working in foreign economic development in Latin America and Southeast Asia for the Rockefeller family philanthropic interests. Was appointed Deputy Secretary of State in 1993 and five other Presidents have appointed him in a U.S. government foreign affairs capacity. Presently serves as a director of the Ford Motor Company, the New York Stock Exchange, Harcourt General, and Tenneco, Inc. Elected to the TIAA Board of Overseers in 1994. Participates also as a trustee of the Overseas Development Council, Winrock International, the American Assembly, the Rockefeller Institute of Government, and the Clark Foundation. Earned B.A. in history from Harvard in 1947, M.A. in International Affairs in 1948 from Johns Hopkins, and M.A. and Ph.D. in economics from the University of Chicago in 1956 and 1958.

Dale E. Hathaway

Director, The National Center for Food and Agricultural Policy and President, Hathaway International. Formerly Under Secretary of Agriculture for International Affairs and Commodity Programs (1977-1981), Director of the International Food Policy Research Institute (1975-1977) and Professor of Agricultural Economics, Michigan State University.

John G. Stovall

Executive Director of the Commission on International Trade, Development and Cooperation and Senior Fellow, National Center for Food and Agricultural Policy. Previous assignments include tours of duty with USAID and the Board for International Food and Agricultural Development, Science and Education Administration and the Economic Research Service, USDA.

Attachment

cc: Messrs. C. Koch-Weser, J. Stiglitz, J-M. Severino, H. Assaad
John Stovall, Comm. on Int'l Trade, Development and Cooperation

March 14 Letter
from Ismail Serageldin

OFFICE MEMORANDUM

DATE: March 14, 1997

TO: Mr. James D. Wolfensohn, EXC

THROUGH: Mr. Caio K. Koch-Weser, EXC

FROM: Ismail Serageldin, ESDVP and Alex F. McCalla, AGRDR 

EXTENSION: 34502; 85028

SUBJECT: **Commission on International Trade, Development and Cooperation**

The National Center for Food and Agricultural Policy established a Commission of distinguished leaders in US agriculture to address two often neglected issues in the agricultural policy debate. These were (1) the stake of US agriculture in the US's international affairs and (2) the economic interests of US agriculture in developing countries and emerging market economics.

The Commission was chaired by Whitney MacMillan, Chairman Emeritus, Cargill, Inc., and included the CEO's of DowElanco, Farmland Industries, Inc., and Southern States Cooperative, as well as the Presidents of both the American Farm Bureau and the National Farmers Union. Also included were Peter McPherson, former administrator, USAID, and now President of Michigan State University, and Cliff Wharton, former Deputy Secretary of State. It is a powerful and independent group who have produced a comprehensive program report which is supportive of the need for more research (especially in the CGIAR) and the need to invest in rural and agricultural development. Almost everything in the report is fully in concord with our new thrusts in Rural Development.

In fact, the concluding sentence in their recommendations is as follows: "The Commission particularly applauds the World Bank's effort to develop a new vision for agriculture and the rural sector, as an example of an area where cooperation and reinforcement is possible."

Alex met with the Commission during its deliberation to describe what the Bank was doing in rural development. He also attended the briefing last week where Mr. MacMillan presented their findings.

We believe it is an excellent report that warrants Bank attention. We recommend that you invite Mr. MacMillan and several of his colleagues to present their findings to you in the near future. It could perhaps be done over lunch. It might also be appropriate to invite Secretary Glickman to join you. Mr. MacMillan expressed an eagerness to meet you and present this report.

For your information, we attach the documents published by the Commission. We stand ready to provide further information if you wish.

Attachments

AMcCalla:fsc

C:\DOCS\MCCALLA\MEMOJDW-CKW.DOC
March 10, 1997 9:52 AM

U.S. INTERESTS IN ECONOMIC GROWTH, TRADE, AND STABILITY IN THE DEVELOPING WORLD

Conclusions and Recommendations
of the

Commission on International Trade, Development and Cooperation

February 1997

National Center for Food and Agricultural Policy
1616 P Street, N. W.
Washington, DC 20036

U.S. INTERESTS IN ECONOMIC GROWTH, TRADE, AND STABILITY IN THE DEVELOPING WORLD

Conclusions and Recommendations of the Commission on International Trade, Development and Cooperation

Whitney MacMillan
Commission Chair
Chairman Emeritus
Cargill Inc.

Wayne Boutwell
President & CEO
Southern States Cooperative, Inc.

H. D. Cleberg
President & CEO
Farmland Industries, Inc.

Rita Colwell
President
University of MD Biotechnology Institute

John Costello
President
Citizens Network for Foreign Affairs

John Hagaman
President & CEO
DowElanco

Dean R. Kleckner
President
American Farm Bureau Federation

Peter McPherson
President
Michigan State University

G. Edward Schuh
Dean & Professor
Humphrey Institute of Public Affairs

Leland Swenson
President
National Farmers Union

Robert L. Thompson
President & CEO
Winrock International

Tom Urban
Professor, Harvard Graduate School of
Business &
Chairman, Pioneer Hi-Bred

Ann Veneman
Secretary of Agriculture
CA Department of Agriculture

Clifton R. Wharton, Jr.
Former Deputy Secretary of State

John G. Stovall
Executive Director of the Commission on International
Trade, Development and Cooperation

National Center for Food and Agricultural Policy

February 1997

PREFACE

The idea for this Commission grew out of the debate that led up to the 1996 Farm Bill. A number of participants lamented that the debate centered around a rather narrow set of policy issues, ignoring some that were extremely critical to the long-term economic health of the U.S. food and agricultural sector. Those neglected issues related to the stake U.S. agriculture has in this country's international affairs, and particularly to our economic interests in developing countries and emerging market economies.

There was a time when the agricultural community was content to leave those lofty and far away matters to others. There were more pressing problems closer to home. But not any more. Now that we are integrated into the international economy, the connection is obvious: economic growth, trade liberalization, and stability in the so-called Third World are just as important, if not more so, to the economic well being of U.S. agriculture as the provisions of traditional domestic farm policy.

Members of the Commission understand these connections and their importance. Perhaps that explains why they were willing to participate in this exercise and fit the time it took to do so into their already crowded agendas. We are grateful to them for their interest and willingness to join in this effort. I have personally enjoyed working with the Commission members and their staff, who have been most patient and understanding as we have moved through the tedious process of reaching a consensus. Special thanks go to Whitney MacMillan, who, as chair, took a special interest in the issues, making my job much easier than it might have been.

Recognition and thanks are also due the 30 or so members of the two working groups who served the Commission. Their make-up, paralleling the diversity within the Commission, helped immensely in clarifying the issues and in searching for a consensus. We wish also to recognize those whose financial contributions made this all possible. They include: The Economic Research Service; the Foreign Agricultural Service and the Agricultural Research Service; USDA; USAID; Cargill, Inc.; DowElanco; Farmland Industries; Pioneer Hi-Bred International; and Harvest States Cooperatives. They deserve our thanks but bear no responsibility for shortcomings in the report and do not necessarily agree with its conclusions and recommendations.

John G. Stovall
Senior Fellow
National Center for Food and Agricultural Policy

TABLE OF CONTENTS

Preface	
Executive Summary	1
Background and Purpose of Commission	3
Conclusions	
Global Leadership: An Imperative for the U.S.	4
U.S. Interests Linked Directly to Economic Growth in the Developing World	5
Economic Assistance, Cooperation and Trade Can Accelerate Economic Growth and Development in the Developing World	6
Future Development Programs Should Focus on Activities with a Record of Success in Poverty Alleviation and in Creating a Climate for Private Sector Investment and Growth	7
U.S. Government Institutions and Delivery Systems for Cooperating with and Assisting Developing Countries are Obsolete, and Hamstrung by Too Many Congressional Restrictions and Mandates	8
Global Food Stability, Closely Linked to Trade and Investment Policy, Require U.S. Leadership and Elevation of Food and Trade Issues on the U.S. Agenda	9
A Strong Global Agricultural Research System is Essential for the U.S. Agricultural Sector, Economic Growth in Poor Countries, Global Food Stability and Environmental Protection	10
U.S. Agriculture in a "Freedom to Farm" Era Faces Difficult Challenges and Unprecedented Opportunities	11

Trade Liberalization and More Open Economies Can Provide the Basis for Twenty-First Century Progress in Economic Growth and Poverty Reduction	11
Economic Growth in Developing Countries Depends Heavily on Private Sector Investment; Therefore, a Major Objective of an International Development and Cooperation Policy Should Be to Foster Public/Private Partnerships	12
Recommendations	12

EXECUTIVE SUMMARY

The Commission on International Trade, Development and Cooperation, formed in early 1996 by the National Center for Food and Agricultural Policy (NCFAP), brought together a cross section of agricultural leaders, agri-business CEOs, academicians and former government officials to forge a consensus about how government policies in international affairs could better serve U.S. interests.

The Commission has concluded that U.S. Foreign Economic Policy in today's post-Cold War environment needs to be re-focused, re-energized and re-funded. Some of the key recommendations are:

1. The President should give the Agency for International Development (USAID) a clear focus, a new name and a streamlined operating mode that sets objectives, allocates resources, and relies on other organizations to do most of its work. It should be an independent agency whose main mission is to promote broad-based economic growth and provide humanitarian assistance.
2. The Administration should continue to strive for a more open globalized food system. Continued reductions in trade and investment barriers will accelerate economic growth, not only in the U.S., but in developing countries as well, and will provide food stability and environmental protection while meeting the world's rising food needs.
3. The Congress should renew "fast track" trade agreement authority.¹
4. International affairs resources can be more efficiently and effectively utilized. Coordination among the many government entities involved in international affairs is lacking. The Administration should correct this problem by implementing an effective coordination process.
5. A strong global agricultural research system is essential for the U.S. agriculture sector, economic growth in poor countries, global food stability and global food security. The Administration should elevate agricultural research to a higher level in the federal government, with clear national commitments, designated leadership and effective coordination.
6. The Congress should increase the budget for International Affairs (150 account) from \$18 to \$20 billion. The Administration and the Congress should increase this account three percent per year over the next five years. One-half of the increased funds should go to agricultural and rural economic development. In addition, the appropriations committees should reorder priorities for FY 1998, in favor of programs that encourage broad-based economic growth.

¹ Commission Member Lee Swenson, President of the National Farmers Union does not support this recommendation.

U.S. INTERESTS IN ECONOMIC GROWTH, TRADE, AND STABILITY IN THE DEVELOPING WORLD

Conclusions and Recommendations
of the
Commission on International Trade, Development and Cooperation

BACKGROUND AND PURPOSE OF COMMISSION

The Commission on International Trade, Development and Cooperation was formed in early 1996 by the National Center for Food and Agricultural Policy (NCFAP) to help define a new national policy and strategic objective for programs relating to international development and cooperation that will serve U.S. interests in the post-Cold War era. The starting point for this assessment was an examination of the twenty-first century interests of the U.S. food and agricultural sector in promoting economic growth and increasing income in developing countries and emerging market economies. The second step was to determine how U.S. programs could be shaped to serve those interests, consistent with other legitimate national objectives.

To a large extent our present economic assistance policies are outgrowths of the Cold War and, with its end, the rationale for them is no longer valid. The Foreign Assistance Act of 1961, the legislation that provides authority for most of these programs, has not had a major revision since 1973, when the "basic human needs" objectives were enacted. That amendment called for a focus on the "poorest of the poor" and programs to improve their well-being. In recent years, several attempts have been made by Congress and successive Administrations to revise completely the basic legislation. However, these efforts bogged down in contentious ideological issues, leaving the nation without a post-Cold War rationale for development assistance, and a program hobbled by obsolete and conflicting objectives, too many earmarks and declining political support.

It is clear we need new policies firmly based on the new and future realities; these policies must be understood and firmly supported by the key sectors of our political economy.

No sector has a greater stake in these new policies than the food and agriculture sector. As markets for food and agriculture have depended increasingly on international trade, Congress has removed the safety net of government support programs--as well as impediments to expanded production--leaving the sector dependent on international trade and the growth of the world economy. If developing countries continue to liberalize trade and investment policies and the incomes of their citizens increase, U.S. agriculture will find ever expanding markets abroad. But, if these economies stagnate,

the effect will be felt at home as agricultural productivity increases but demand does not.

The Commission was given a broad mandate to identify the key issues that should be addressed, suggest ways to address those issues and recommend specific programs and policies that will serve the long-term interests of both the nation and the food and agricultural sector. The work of the Commission was supported by two expert working groups² and the National Center staff.

This report is the consensus of the 14-member commission concerning some of the key elements of a post-Cold War policy that will serve this country's interests.

CONCLUSIONS

Global Leadership: An Imperative for the U.S.

As the sole remaining superpower, the U.S. inherits a mantle of leadership along with obligations for maintaining global security and economic order. These responsibilities also open up unprecedented opportunities to help shape the world in line with the interests of this country.

Threats to peace and security are numerous and varied: regional and ethnic conflicts, renegade dictators, terrorists, overwhelming streams of refugees, famines and environmental disasters. Military power is essential in carrying out our global responsibilities, but there are other useful, and more cost effective and longer lasting, means at our disposal. Diplomacy and economic assistance can often be used instead of more costly military solutions. Thus, these tools should be considered just as much a part of our national security arsenal as are weapons of war.

The new leadership role also requires resources, which in a balanced budget era become an easy target. Aside from the large military outlays, the cost of maintaining a presence abroad and financing many other commitments that contribute to our leadership is currently supported by an appropriation of about \$18 billion³, one-third less than a decade ago.

A recent bipartisan Task Force of distinguished private citizens sponsored by the Council on Foreign Relations and the Brookings Institution concluded:

² The Working Group on International Agricultural Research was chaired by Dr. E.T. York, University of Florida and the Working Group on International Trade and Development was chaired by Dr. Robert Paarlberg, Wellesley College.

³ Congressional appropriations for International Affairs (150 account) include funds for bilateral and multilateral aid, the U.S. Information Agency, and other related agencies.

....the cuts already made in the international affairs discretionary account have adversely affected, to a significant degree, the ability of the United States to protect and promote its economic, diplomatic and strategic agendas abroad. Unless this trend is reversed, American vital interests will be jeopardized.

The Commission agrees that the current level is grossly inadequate for the global leadership role that this country's interests require. Further reductions projected by some balanced budget plans are short-sighted and could cost us many times over in the longer term.

U.S. Interests Linked Directly to Economic Growth in the Developing World

Some prominent economists predict that the history of the 20th century will show that a remarkable revolution began in developing countries and emerging economies. This little-known revolution came from new democratic governments and some authoritarian regimes that recognized the enormous economic growth potential of lowering trade and investment barriers and connecting to a global economy. These policy reforms led to trade-driven economic growth, not only for the developing countries initiating the reforms, but also for the U.S., who gained new trading partners.

The magnitude of these emerging markets and their implications for the future are only beginning to be recognized. The International Trade Administration identified 10 "Big Emerging Markets" where the greatest commercial opportunities lie.⁴ According to some estimates, our exports to these 10 markets will equal our exports to either Japan or Europe by the end of this century and will exceed the combined totals for Japan and Europe by 2020.

The growth in U.S. agricultural exports is even more closely tied to the developing world. Because of lower population growth rates and already high income levels, developed countries offer limited prospects for expanded food demand. But in developing countries, where a relatively large share of any increased income goes for food, economic growth coupled with high rates of population growth can result in dramatic increases in food demand.

⁴ ITA considers South Korea, the Chinese economic area, the Association of Southeast Asian Nations (ASEAN), India, South Africa, Poland, Turkey, Brazil, Mexico and Argentina to comprise the 10 Big Emerging Markets.

The vast potential for growth in agricultural trade will not be realized, however, unless the U.S. positions itself to take full advantage of such emerging opportunities. We must:

- lead the way in further reducing trade and investment barriers;
- develop strong and effective bilateral partnerships with developing countries based on mutual benefits;
- exercise strong leadership in multilateral efforts to solve tough global and regional problems that threaten to undermine economic growth and prosperity; and
- invest more in research and technology to avoid erosion of a competitive edge in this highly competitive environment.

The costs of these programs should be viewed as investments with potentially huge payoffs for the next generation of Americans.

Economic Assistance, Cooperation and Trade Can Accelerate Economic Growth and Development in the Developing World

Polls show, as most people already know, that there is widespread skepticism in the U.S. about the effectiveness of foreign aid or economic assistance. Many Americans believe these programs are a waste of taxpayers' money. There are also widespread misconceptions about foreign aid. Other polls show that most Americans think we spend far more than we do on foreign aid (15-20 percent of the federal budget compared to the actual one-half of one percent), and when asked how much we should spend, the answer was several times more than actual current levels.

The success record of economic assistance is mixed. There are enough failures to convince the skeptics, but advocates quickly point out numerous successes, making a convincing case for development assistance. During the Cold War, some of our foreign assistance went to corrupt or incompetent regimes in Asia, Africa and Latin America to win them over from Soviet influence. The money--much of which was channeled through government entities--did not always go for sound developmental purposes. Not surprisingly, there was little economic development as a result.

On the other hand, a remarkable number of countries used this Cold War assistance wisely, sometimes with spectacular results. The success of the Marshall Plan in rebuilding Europe is well-known but sometimes forgotten. Taiwan and South Korea were early Cold War recipients of assistance that helped in their remarkable ascension

up the development ladder. Today these two countries are major trading partners with the U. S., accounting for \$4.4 billion of our agricultural exports.

Another success story of development assistance was our support for the International Agricultural Research Centers (IARC). These centers were largely responsible for the well known "green revolution" that boosted wheat and rice production in Asia and other parts of the world, and they are still making contributions to agricultural development around the globe. But two important effects are less well known. First, the technology produced by the IARC and other research organizations had the effect of lowering food prices around the world, benefiting those most who spend a higher proportion of their income on food--the poor. Second, few recognize that this country also received large benefits from these investments in international agricultural research. An International Food Policy Research Institute (IFPRI) study estimated that U.S. wheat and rice farmers received benefits worth over 100 times the cost of these programs in the form of higher yields resulting from the IARC improved crop varieties adopted by U.S. farmers.

The Commission concludes that economic assistance and cooperation can make a significant contribution to economic growth in developing countries by helping to create conditions favorable for private sector trade and investment and can benefit the U.S. at the same time (a win-win proposition).

Future Development Programs Should Focus on Activities with a Record of Success in Poverty Alleviation and in Creating a Climate for Private Sector Investment and Growth.

More important than past successes and failures is the fact that much has been learned from nearly a half century's experience in development assistance and cooperation. The conditions that give rise to economic growth are reasonably well understood, as is the environment that fosters private investment and trade.

We have also learned much about what does not work. We have learned the hard way that assistance to governments that are not committed to economic and social reforms leads to waste and corruption, no matter how much aid is given. We have learned that mutually beneficial cooperation and collaboration work better than traditional aid.

Some other important lessons from past experience are:

- Investments in **improving human capacity** have high long-term payoffs: numerous examples and studies of the success of efforts to improve education, research and health tell us that such investments yield high returns over a long period of time.

- The U.S. has the know-how and experience to provide technical assistance in **institution building**: creating or strengthening institutions that are essential for private sector growth, international trade, and participatory governance.⁵ The U.S. has a wealth of experience in strengthening institutions for education, research, health care, market information, and other purposes. This country is also more sensitive than most donors to the ineffectiveness of excessive regulation and too much government: bloated bureaucracies and government-run enterprises.
- **Agricultural development**--A large body of knowledge exists on how to transform a low-productivity, inefficient agricultural sector into a highly productive food system. Further, much of the experience and scientific capacity to accomplish agricultural transformation resides in the U.S., giving this country a comparative advantage among donors to assist with this complex task.
- The payoff from investments in **agricultural research** is perhaps more carefully documented than in any other development endeavor. The overwhelming conclusion from numerous studies around the world is that the rate of return from investments in agricultural research is remarkably high (up to 100% annually and 40-50% consistently), and public agencies are underinvesting in it, often considerably less than the optimum amount. Private sector research, an increasingly important component as countries develop, benefits from a strong public sector research system.

U.S. Government Institutions and Delivery Systems for Cooperating with and Assisting Developing Countries are Obsolete, and Hamstrung by Too Many Congressional Restrictions and Mandates

Although the world has changed dramatically over the latter half of this century, and despite countless studies, task forces and commissions that have all called for reform, the agency of government that administers foreign aid has been slow to adjust. Over the past decade, many observers have described USAID as inefficient, intellectually exhausted, lacking vision, and strangled by too many objectives, restrictions and directives. To its credit, the current Administration has addressed many of these deficiencies, but it is too early to judge the effect. Since Congressional earmarks and directives leave the agency little leeway in setting priorities, a more sharply focused program will depend on cooperation between the two branches of government.

Although we have focused mostly on USAID, another institutional problem is the proliferation of government entities involved in foreign assistance and the resulting

⁵ Some examples are institutionalization of commercial codes, definition of property rights and fair judicial systems to settle contract disputes.

lack of coordination among them. There are literally several dozen agencies, departments, and bureaus that now have some responsibility for the International Affairs function. Not surprisingly, effective coordination is difficult and sometimes lacking, with the result that priorities among programs are not clear nor is their link to the national interest.⁶

This Commission--like many other study groups in the past--concludes that the government institutions responsible for international affairs have serious flaws and some are badly in need of repair. We realize that real reform will not be easy: it will take years to accomplish, and may not be possible in the absence of a consensus concerning what role this country should play in the developing world. That is why we recommend steps that take these obstacles into account.

Global Food Stability, Closely Linked to Trade and Investment Policy, Require U. S. Leadership and Elevation of Food and Trade Issues on the U. S. Agenda

The World Food Summit in Rome in the fall of 1996, helped focus attention on hunger, malnutrition, food availability, and access to food. Preparation for the Summit helped bring long-neglected food issues to the forefront in this country as well. Food security--or food stability, as we prefer to call it--received an unusual amount of attention from high level officials in USAID and the Departments of State, Agriculture, and Treasury. More importantly, there was the promise that this welcome interagency cooperation would continue.

Unfortunately, many of the concerns about food security, and many of the prescriptions proposed to ensure food security, are misguided. Although the problem is often seen as one of availability, access to food is the more serious problem, at least in the near term. The greatest barriers to access are: (1) poverty (inability to buy food); (2) trade barriers (preventing import and export); (3) inadequate food systems (to move, market, and process food products); and (4) political instability and regional conflicts (interrupting the movement of food). Fortunately, with foresight and wise public policies, the first three threats can be eliminated or greatly reduced. The fourth threat to food access--political instability and regional and ethnic conflicts--has no easy solution and may never be eliminated. For that reason, food aid will be required.

There are also legitimate concerns about the long-term ability of the world's natural resource base, combined with available technology, to meet the food needs of a growing and more affluent population. The agricultural research system in many countries has fallen into disrepair, and public investment in them has dwindled. If

⁶ An earlier attempt to improve coordination was the creation of the International Development Cooperation Agency (IDCA) in 1979 (with its Director reporting to the President). Although IDCA remains "on the books," it has never been activated or implemented.

these deficiencies are not rectified, productivity will lag and concerns about long-term food availability may become a reality. Failure to maintain productivity gains will also have an adverse effect on the environment as production expands to more fragile lands in order to feed more people.

Aggressive U.S. leadership and action are required in order to achieve progress on these issues.

A Strong Global Agricultural Research System is Essential for the U.S. Agricultural Sector, Economic Growth in Poor Countries, Global Food Stability and Environmental Protection

Like the agricultural sector that it serves, the U.S. agricultural research system (composed of federal, state and private institutions) has become part of a globalized system, inextricably linked to and dependent upon it for critical knowledge, genetic resources and new technology. The U.S. system, that once served a closed agricultural economy, is now struggling to meet the needs of a modern agricultural sector that competes in a global economy where knowledge and technology spread rapidly around the globe, ignoring political and geographic boundaries. Biotechnology, combined with the Internet, open up unprecedented possibilities for future advances and for shortening the lag time between the initiation of research and its payoff.

In this kind of environment, U.S. public sector agricultural research can no longer serve its clientele--if it ever could--without strong links to the global system. But the USDA and Land Grant Universities have not fully exploited the well-recognized benefits from closer ties to the global system. For example, USAID (now with very limited technical agricultural capability) has oversight and support responsibility for the Consultative Group on International Agricultural Research (CGIAR), that supports a network of 16 International Agricultural Research Centers (IARC). But USDA, with a \$1 billion domestic agricultural research program, has little, if any, role in CGIAR policy matters and does not participate in the USAID Collaborative Research Support Program (CRSP), a joint venture involving more than 40 U.S. universities and scientists in 35 developing countries⁷.

The Commission concludes that support for and participation in international agricultural research is too important to be subject to interagency turf scimmages: agricultural research should receive a higher level of attention in the federal government and the Administration should make clear national commitments and designate responsibility for leadership and interagency coordination.

⁷The CRSP is an innovative approach that was originated by the Board for International Food and Agricultural Development and adopted by USAID in the late 1970's.

U.S. Agriculture in a "Freedom to Farm" Era Faces Difficult Challenges and Unprecedented Opportunities

With the passage of the 1996 Farm Bill⁸ and its "Freedom to Farm" provisions, the U.S. food and agricultural sector is positioned to capture the growth in world markets. However, the other side of the coin is that the economic future of this sector is increasingly dependent on what happens in those foreign markets. How they grow and our access to those markets will be determined, in part, by U.S. policy on international trade, development and cooperation.

If markets fail to expand as fast as productivity, or if bumper crops around the world depress prices, there will be strong political pressure from U.S. farmers for government intervention to support prices. But in the "freedom to farm era," there are few tools available to the federal government to cushion the impact on the farm sector.

This leads the Commission to conclude that the most important action the U.S. government can take to minimize the risk of such an impact is to pursue policies that ensure market access, promote demand expansion, encourage economic growth in developing countries and increase trade liberalization.

Trade Liberalization and More Open Economies Can Provide the Basis for Twenty-First Century Progress in Economic Growth and Poverty Reduction

Countries all around the globe are discovering the benefits of open market economic systems and lower investment and trade barriers. They are finding that a market system connected to the world markets can lead to trade-led, broad-based economic growth. Examples can be found in the former Soviet Union, Eastern Europe, Latin America and Asia. There are even hopeful signs in Africa.

For poor countries this is welcome news: it means that there is new hope for alleviating poverty and achieving a degree of food stability. These developments also offer new opportunities for the U. S., a country that historically has been a leader in lowering trade and investment barriers but that recently has shown signs of wavering.

In adjusting to lower trade barriers and reaping the benefits of trade-driven growth, governments have a responsibility to ensure that policies provide equitable opportunities for all to share in the benefits, especially small farmers, laborers and small businesses.

⁸ The Federal Agriculture Improvement and Reform Act of 1996 (FAIR).

The Commission believes that while there are sometimes short-term adjustment problems for certain segments of our society, the long-term benefits of trade liberalization are enormous. The costs of not pursuing free trade policies are so great that our leaders cannot afford to let these historic opportunities pass.

Economic Growth in Developing Countries Depends Heavily on Private Sector Investment; Therefore, a Major Objective of an International Development and Cooperation Policy Should Be to Foster Public/Private Partnerships

If open market economies and agricultural transformation provide the engine of growth for developing countries, private investment is the fuel that makes the engine run. Therefore, development policy should encourage private sector investment and support effective partnerships between the public and private sectors, both in this country with private firms interested in seeking investment opportunities, and in the developing countries that will require a viable private sector for economic growth.

Business firms complain that USAID is a difficult and costly (high transaction costs) agency with which to work. Moreover, USAID, with an eye toward the Inspector General and congressional oversight committees, has been especially careful about entering into partnerships with the business community. There are also some who believe that business and export expansion objectives are best left to other agencies, such as the Overseas Private Investment Corporation (OPIC), Export-Import Bank, USDA and the Office of Trade and Development in Commerce.

The Commission believes there are opportunities for creative public/private partnerships and that USAID, as well as USDA, should devise cooperative relationships with the private sector, including PVOs, universities and for-profit businesses. These partnerships should be cost-effective and be designed to achieve development objectives.

RECOMMENDATIONS

These conclusions lead to the following recommendations by the Commission:

- I. The U.S. Government should maintain a strong, independent agency with the primary responsibility for international development and humanitarian assistance. (USAID should not be folded into the State Department.)
- II. The Commission believes that USAID has several deficiencies that can be corrected: it is not an attractive partner for PVOs, universities or for-profit firms, on which it must depend to implement programs; it lacks a coherent focus; it suffers from too many earmarks and demands on its resources; and it has many

other frequently cited problems. Correction of these problems should receive highest priority by the President in concert with Congress.

- III. The President should redefine the goals, objectives and mission of USAID and give it a name consistent with that mission. The President should then work with Congress to enact a new Foreign Assistance Act that provides authorities consistent with the redefined mission.
- The primary mission of this independent agency should be to promote broad-based economic growth in developing countries and emerging market economies and to provide humanitarian assistance in response to famine, natural disasters, and other emergencies around the world.
 - The name of the agency should reflect the new mission and new approach, emphasizing cooperation and collaboration rather than “aid.” The “International Development Cooperation Agency” (the name of USAID’s official but inactive, parent organization) would be an improvement, in the Commission’s view.
- IV. Until such time as Congress enacts a new Foreign Assistance Act, the Administration and the Appropriations Committees of Congress should reorder program priorities to emphasize and encourage broad-based economic growth. Because the removal of international trade and investment barriers is a major source of economic growth worldwide, programs should promote free trade policies, provide technical assistance and support collaborative efforts to strengthen institutions needed for trade driven market economies.
- V. In order for the U.S. to make further gains in reducing trade and investment barriers, Congress should grant “fast track” trade agreement ratification procedures. In turn, the Administration should aggressively pursue further reductions in trade barriers. Without fast track guarantees, foreign governments will be reluctant to offer concessions to U.S. negotiators for fear that Congress will ask for still more concessions after the final international bargain has been struck.⁹
- VI. Congress should increase appropriations for International Affairs (150 account) to \$20 billion in FY 1998. In addition, Congress should reconsider their proposed future reductions in funding for International Affairs. Instead, the Commission strongly recommends a modest three percent increase (in real terms) per year over the next five years, reversing the downward trend that over the last decade has reduced U.S. capacity to exert the global leadership necessary

⁹ This recommendation was not supported by Commission member Lee Swenson, President of the National Farmers Union.

to serve our economic and political interests. The approximately \$11 billion added to the 150 account over that period will have many worthy claimants, but we suggest that at least one-half be used to finance a revitalized economic growth package that includes the following components:

- **International Agricultural Research**
Create a fund to support promising collaborative research initiatives and restore U.S. leadership in international agricultural research.
- **Food and Agricultural Systems Transformation in Selected Countries**
Select a few countries that agree to make policy reforms and provide technical assistance, education and training to assist in modernizing their food and agricultural systems.
- **Public/Private Partnerships for Development**
Support U.S. for-profit firms willing to invest in growth and trade stimulating activities by making U.S. funds available for development purposes such as research, education and training initiatives.
- **Technical Assistance in Support of Trade Liberalization and Institutions for Market Economies**
Provide technical assistance and training for selected countries that are willing to lower trade and investment barriers and to build or strengthen institutions for market economies. Examples include establishing new sanitary and phytosanitary control procedures, improving trade policy analytical capacity, modernizing communications and transportation, and creating credit and legal institutions that improve the climate for private sector growth.

VII. The International Affairs budget is not the only source of support for activities vital to broad-based economic growth and the competitiveness of the U.S. food and agriculture sector. The agricultural research system financed in large part by USDA appropriations, is inadequately funded. Adequate investment in this system can help keep consumers' food bills relatively low, increase access to trade opportunities and improve our competitiveness in world markets. Likewise, USDA programs that help ensure open and expanding markets around the world are essential to the health of U.S. agriculture. The Commission recommends that these programs meeting the test of good investments for the future, not be sacrificed for short-run budget savings.

VIII. The Administration should ensure that international affairs functions and programs carried out in various departments, agencies and bureaus are consistent with policy objectives and are coordinated in such a way that waste, inefficiency, and duplication are eliminated. The Commission does not believe it

prudent to prescribe the coordination process--that is the responsibility of the Administration. But if coordination mechanisms exist, they do not appear to be effective. Some examples of weaknesses are to be found in international agricultural research, bilateral-multilateral functions, and trade related assistance.

- IX. As the largest stockholder in the Multilateral Development Banks, the U.S. should exercise leadership to promote priorities that are consistent with the preceding recommendations by the Commission. Only the World Bank has the resources to have a significant impact on many of the global problems, and we urge that they be addressed multilaterally. We should strive to make bilateral and multilateral efforts reinforce, not compete with, each other. The Commission particularly applauds the World Bank's efforts to develop a new vision for agriculture and the rural sector, as an example of an area where cooperation and reinforcement is possible.

DEVELOPMENT, TRADE EXPANSION, AND U.S. AGRICULTURE: POLICIES FOR THE 21ST CENTURY

A Report of the

Working Group on International Trade and Development
to the
Commission on International Trade, Development and Cooperation

February 1997

National Center for Food and Agricultural Policy
1616 P Street, N. W.
Washington, DC 20036

DEVELOPMENT, TRADE EXPANSION, AND U.S. AGRICULTURE: POLICIES FOR THE 21ST CENTURY

Report of the Working Group on International Trade and Development

Robert Paarlberg
Working Group Chair
Wellesley College

John Becker
USAID

Frank Fender
USDA/FAS

Earl Kellogg
Winrock International

Stephen Lewis
Carleton College

Mark Lindenberg
CARE

Gary Martin
Farmland Industries, Inc.

Edwin Price
Texas A & M University

Barbara Spangler
American Farm Bureau Federation

James Starkey
Universal Corporation

Ann Tutwiler
Central Soya Company

Norm Uphoff
Cornell University

Bryant Wadsworth
U. S. Meat Exports Federation

Kelley White, Jr.
USDA/ERS

Marcia Wiss
Wilmer, Cutler & Pickering

John G. Stovall
Executive Director of the Commission on International
Trade, Development and Cooperation

National Center for Food and Agricultural Policy

February 1997

PREFACE

This is one of three reports issued by the National Center for Food and Agricultural Policy in connection with the Commission on International Trade, Development and Cooperation. Another report comes from the Working Group on International Agricultural Research and another reports the Conclusions and Recommendations of the Commission.

This Working Group on International Trade and Development was formed to assist the Commission by identifying the key policy issues and offering background information and policy options. The Commission's report draws heavily on this report and adopts its major recommendations.

The idea for this Commission grew out of the debate that led up to the 1996 Farm Bill. A number of participants lamented that the debate centered around a rather narrow set of policy issues, ignoring some that were extremely critical to the long-term economic health of the U.S. food and agricultural sector. Those neglected issues related to the stake U.S. agriculture has in this country's international affairs, and particularly our economic interests in developing countries and emerging market economies.

There was a time when the agricultural community was content to leave those lofty and far away matters to others. There were more pressing problems closer to home. But not any more. Now that we are integrated into the international economy, the connection is obvious: Economic growth, trade liberalization, and stability in the so-called Third World are just as important, if not more so, to the economic well being of U.S. agriculture as the provisions of traditional domestic farm policy.

On behalf of the National Center for Food and Agricultural Policy and the Commission, I wish to thank the members and alternates who served on this working group. Special thanks are due Dr. Robert Paarlberg, chair of the working group, for his leadership and for producing this report.

Recognition and thanks are also due those whose financial contributions made this all possible. They include: The Economic Research Service; the Foreign Agricultural Service and the Agricultural Research Service; USDA; USAID; Cargill, Inc.; DowElanco; Farmland Industries; Pioneer Hi-Bred International; and Harvest States Cooperatives. They deserve our thanks but bear no responsibility for the content of the three reports and do not necessarily agree with their conclusions and recommendations.

John G. Stovall
Senior Fellow
National Center for Food and Agricultural Policy

TABLE OF CONTENTS

Preface

I.	Statement of Purpose: Development, Trade Expansion, and U.S. Agriculture	1
II.	The Globalization of U.S. Agriculture	2
III.	U.S. Assistance Policy in the Past: A Success or a Failure?	4
IV.	Does U.S. Assistance to Foreign Agricultural Production Hurt or Help U.S. Agriculture?	7
V.	The New Challenge in Development Cooperation	9
VI.	The New Challenge in Trade	14
VII.	Responding to the Development Challenge: Improving Delivery Systems	15
	Closer Partnerships	17
	Reduced Micromanagement from Congress	18
	Reduced Dictation from the Foreign Policy Community	18
VIII.	Institutional Change: Long Term and Short Term Goals	19
IX.	Opportunities to Move Toward Partnership	20
	Multilateral Agencies	21
	Other U.S. Government Agencies, Including State Governments	22
	Reasons to Partner with Foreign Governments	23
	Reasons to Partner with PVOs and Universities	23
	Reasons to Partner with Private Investors	24

X.	Parallel Trade Policy Responses	26
XI.	Conclusion	28
	References	30

DEVELOPMENT, TRADE EXPANSION, AND U.S. AGRICULTURE: POLICIES FOR THE 21ST CENTURY

Report Of The Working Group On International Trade And Development

Robert Paarlberg, Chair

I. Statement of Purpose: Development, Trade Expansion, and U.S. Agriculture

The purpose of this Working Group has been to envision, document, and describe new ways in which U.S. agriculture can profit from revitalized trade and development cooperation policies abroad. In world agriculture, doing good abroad and doing well at home can go hand-in-hand. Abroad, we seek agricultural and rural development, which is broadly-based and environmentally sustainable, and capable of improving food security and economic welfare in developing countries. At home, we seek a U.S. farm sector made more prosperous through continued growth in international trade. To pursue these goals side-by-side, we envision new forms of cooperative action among private-sector firms, private-voluntary organizations (PVOs) and universities, as well as government agencies. Developing new partnerships between the public and private sectors will be the key to success.

These new partnerships must:

- Recognize the important role of public sector investments at federal, state, and local levels, in building physical infrastructure; developing education, health and research institutions; and providing sound policies, regulatory, governance, and legal systems.
- Support and facilitate the involvement of the private sector in developing efficient and robust production, input/output marketing and international trade systems.
- Give farmers, farm industries, and consumers improved choices through greater access to open international trade.
- Support the involvement of PVOs, in reaching and including local people in developing innovative solutions to development and humanitarian problems.
- Support and facilitate the involvement of universities - including students, faculty, and extension services - in education, research, and public service

faculty, and extension services - in education, research, and public service activities related to agricultural development and trade.

This Working Group believes that broadly based agricultural development efforts focused on benefiting developing countries and people will also benefit the U.S., including U.S. agriculture. The partnerships we recommend here are an affordable path to a better future for farmers, farm communities, and agricultural industries in rich and poor countries alike, and represent a worthy policy agenda for the U.S. agricultural and international affairs community.

II. The Globalization of U.S. Agriculture

American agriculture has a strong interest in the international development and trade policies of the U.S. government. This is because the American agricultural sector is already one of the most globalized sectors of the U.S. economy.

Total U.S. agricultural exports for 1995 were valued at \$55.8 billion, or roughly one-tenth of total U.S. exports, one-quarter of all agricultural exports world wide, and roughly 27 percent of total U.S. gross farm income. Roughly 60 percent of new sales growth has been occurring in developing countries. These agricultural exports stimulated an additional \$76.6 billion in economic activity across all sectors of the U.S. economy in 1995, for a total economic boost of \$132 billion. Roughly 17,300 U.S. jobs are now being created for every \$1 billion in agricultural exports, and roughly four-fifths of these export-linked jobs are created off the farm, in upstream or downstream agricultural industries.

The dependence of the American agricultural sector on exports will increase in the years ahead, because it is demand abroad that has more room to grow. Population growth rates at home will be low and consumption will have limited room to expand because income is already relatively high. In the developing world, by contrast, population is still growing rapidly and incomes are now in a position to grow rapidly as well, from low levels. This portends a further enrichment of diets, leading to added consumption of animal protein (meat, milk, eggs), boosting demand for products (including animal feed products, such as corn and soybeans) which U.S. agriculture is well equipped to produce and export. One USDA forecast projects that between 1993 and 2010 the share of U.S. grain production that goes abroad will increase from 16.4 percent to 28.6 percent. If income can be pushed to grow above trend in these developing countries, even more will be exported. In fact, USDA calculations reveal that higher income growth in developing countries will be even more important than higher income growth at home in stimulating future demand for U.S. grains (Gehlhar, Shane, and White 1996).

Without continued international trade expansion driven by rapid economic growth in non-industrial and industrializing countries, those who work in American agriculture will face a future burdened by difficult adjustments. Productivity growth in American agriculture is so high that without market expansion beyond our borders, more agricultural workers at home (on the farm and off the farm) would have to move out of the sector, a painful adjustment that would lower incomes for many, and, in some cases, threaten the survival of entire farm and agribusiness-based rural communities.

More than just the welfare of American agriculture is at stake, of course. An expansion of U.S. farm exports driven forward by broadly-based international income gains contributes directly to the nutrition of hundreds of millions of citizens in other countries. The nutritional circumstances of these consumers abroad can be improved, income can be helped to grow even more rapidly (as new efficiencies are captured through trade), and in many cases the environmental resources of these foreign countries can be better protected through trade expansion. International agricultural trade can be good for the environment in nations with dense populations, scarce water, and fragile land endowments, since these nations would damage their resource base if they tried to meet all of their growing food needs without trade, through domestic production alone.

An important vision of the future thus emerges; one which sees mutual gains from globalization, rather than only harsh competition or painful adjustment. Trade expansion driven by broadly based international economic development serves the interests of American agriculture in harmony with the interests of foreign citizens and the global environment. This is a vision worth pursuing through the wise conduct of U.S. government policy.

This vision is founded in part on past experience. Recent history provides abundant evidence that American agriculture can benefit from policies designed to promote open trade and international economic development. Yet the current policy climate brings distinct new challenges, including large federal budget constraints, a weakening of the traditional cold war security argument for investing in development cooperation abroad, and a diminished public faith in all federal government programs. In U.S. development policy, the era of big government is over. If gains for U.S. agriculture are to continue to be captured, a new model for development cooperation policy must be designed, one suited to today's small government, budget-constrained, post-Cold War era.

The new model we propose here relies more on private sector actions and resources (both U.S. private companies, and U.S. based Universities and PVOs), mobilized through *partnership* with government agencies. The requirements for moving toward this partnership model will be shown to include significant institutional changes within the U.S. Agency for International Development

(USAID), so as to make that agency a more attractive partnering agent. The current tendency of Congress to try to micro-manage U.S. trade and development policy must also change, and the frequent subordination of development cooperation policy to short-term diplomatic fluctuations must be minimized.

How can a political consensus be built to embrace this new model of international trade and development cooperation policy? We shall argue here that the U.S. agricultural sector has a strong self-interest in development and trade policy revitalization, and should be willing to take a leading role in arguing for the policy changes now required. A strong endorsement from organized agriculture could be a key first step toward making trade and development policy revitalization a political reality.

III. U.S. Assistance Policy in the Past: A Success or a Failure?

During the Cold War era, U.S. development assistance policy generated a mixed record, with some prominent successes alongside numerous instances of failure. Humanitarian relief and human welfare assistance policies were at times spectacularly successful. USAID support for child inoculations and oral rehydration helped reduce infant mortality, as life expectancy in poorer countries increased on average by more than 20 years (from 41 years to 62 years). In the 1980s alone, a major foreign assistance effort led to a doubling of the proportion of people in developing countries with access to clean water (from 35 percent to 70 percent). Adult literacy has risen from less than half to about two-thirds. Food production and consumption in the developing countries was able to increase 20 percent faster than population growth (OECD 1996). The "green revolution" seed and farm production technologies that made this increase possible would not have become available without generous U.S. foreign assistance to international agricultural research.

Of course much money has also been wasted through foreign assistance. During the Cold War, billions of foreign aid dollars were given to corrupt or incompetent regimes abroad for the purpose of preserving base rights, buying diplomatic support, or securing votes in the UN General Assembly in the high-stakes global competition with the Soviet Union. During the Cold War, assistance seldom went for pure development purposes. It is unsurprising that much of it failed to generate patterns of overall development success.

Still, a remarkable number of nations used this Cold War development assistance money wisely, sometimes with spectacular results. The developing countries of East Asia, which were among the first to side with the U.S. during the cold war (especially South Korea and Taiwan), received generous early development assistance, and began growing quickly as a result. During the

years following 1945, Taiwan and South Korea together received roughly \$18.6 billion in U.S. economic and military aid overall, plus sound technical and policy advice. The money and advice did not go to waste, as South Korea and Taiwan embraced social policy reforms (especially land reforms), made large investments in the health and education of their own people, put sound macroeconomic policies in place, and committed themselves to international trade. American agriculture was eventually the beneficiary. As these nations industrialized rapidly and as incomes grew, they increased their consumption of food and soon emerged as good customers for the U.S. farm sector. Taiwan went from being a net *exporter* of cereals in the 1950s to a \$2.1 billion market for U.S. farm products today. South Korea is now a \$2.3 billion market for U.S. farm exports. Japan, which also received generous assistance after 1945 (and which President Kennedy was still calling a “developing country” as late as 1962), is now a \$9.3 billion market for U.S. agricultural exports.

Broad-based economic growth in the rest of the developing world beyond East Asia would be a worthy development policy goal for the U.S., since it would generate not only enormous citizen benefits within those countries, but also economic benefits for the U.S. In recent years, U.S. exporters of all products have become increasingly dependent on income growth in the developing world. Between 1988-1994, total U.S. exports to developing countries grew by 84 percent, more than twice the rate of growth of exports to developed regions such as Europe.

The problem is that some developing country regions are not yet generating the income growth that drives this sort of trade expansion. The World Bank is currently forecasting only a .9 percent annual growth rate in per capita GDP in sub-Saharan Africa between now and 2003, far below the 6.2 percent growth rate expected in East Asia (Alexandratos 1995). If Africa grows no more than this, the absolute numbers of hungry people on that continent will continue to increase, and Africans will lack the income needed to make their growing demands for food felt in the world’s commercial market place.

Much has been learned over the past several decades about what kinds of development efforts work best. USAID has conducted frequent evaluations of its past programs, and has even been able to measure its past success in the agricultural sector in quantitative terms. It can demonstrate that economic rates of return to its investments in agricultural technology development and diffusion, even in difficult settings such as Africa, have averaged 30-40 percent over the years (USAID 1996). Still, a number of difficult tactical lessons have been learned which implicitly set limits on what can be done:

- Sound policies within the recipient country are especially important. USAID has concluded it should invest only reluctantly, if at all, in countries where an adverse economic policy environment prevails.

- In agriculture, technology plays a central role. The transformation of the farming sector requires technical change, and investments in adaptive technological change pay large dividends.
- Rural infrastructure and human capital have underlying importance. Without an educated and empowered population, and without roads from farm to market, rural communities cannot respond to markets even if technology is available and prices are right.

With this growth in policy knowledge has come renewed success. USAID today can point to an important new development assistance success story in its support for the production of non-traditional agricultural exports (NTAEs) from Latin America. USAID provided significant support, especially in the 1980s, to Central and South American countries seeking to diversify their farm export sectors beyond traditional crops such as coffee, bananas, cotton, beef, and sugarcane, into "non-traditional" crops such as melons, berries, citrus fruits, mangos, and flowers. This USAID support, successfully undertaken in a context of larger political and policy changes underway in the region (including democratization and structural adjustment), helped generate an increase in NTAE exports profitable for all concerned. In 1970, Latin America and the Caribbean exported \$200 million in NTAEs; by 1993, the figure had jumped to over \$1.65 billion.

This recent NTAE success clearly demonstrates that USAID investments can pay off in the recipient country. Per dollar of project expenditures in Central America and Ecuador, USAID money generated internal rates of return of 15 percent and 22 percent, respectively. The payoff was also strong from the vantage point of social justice, since NTAE production has boosted incomes of the rural poor, including especially women. In Central America, most NTAE production units are family farms from one to five hectares in size. Production is highly labor-intensive, employing up to eight times more person-days per hectare than traditional agriculture. Guatemalan snowpeas provide farmers with an average of ten times the gross income obtainable from corn, and an average of 13 times the gross income obtainable from coffee. In Guatemala, the poorest 25 percent of the people have captured 20 percent of the income gains from NTAE expansion, much more than the 3 percent gain they make, on average, from growth in the rest of the nation's economy.

What does the NTAE case mean for U.S. agriculture? Most of the gains for NTAE producers in Latin America pose little or no threat to farmers in the U.S. The NTAEs being exported either don't compete with significant numbers of U.S. farmers at all (mangos), or they go to market during winter months, when U.S. producers cannot provide supplies anyway. This is why the total volume of U.S. fruit and vegetable exports has continued to increase in recent years (by

about 40 percent, between 1990-1995), despite the NTAE success in Central and South America.

For U.S. producers, increased product availability from Latin America during the winter months can even be a plus, since it tends to reinforce and sustain the taste of U.S. consumers for fresh fruits and vegetables year-around. All the while, production of NTAEs in Latin America is a significant boost to U.S. agricultural machinery and input supply industries, which make larger sales as production in the hemisphere continues to grow. NTAE imports from Latin America are also, of course, a substantial gain for U.S. consumers, who are increasingly attracted to the health advantages of year-round fresh fruit and vegetable consumption.

This NTAE example from Latin America is only the most recent example of a development assistance success story. As with the earlier East Asia case, it illustrates a larger truth. Economic success abroad is good for agriculture in the U.S. Even when U.S. foreign assistance efforts are directed toward increasing *agricultural production* in poor countries, the larger results can still be complementary with the interests of the farm sector in the U.S.

IV. Does U.S. Assistance to Foreign Agricultural Production Hurt or Help U.S. Agriculture?

It seems paradoxical at first, but assistance to farming in poor tropical countries is one of the best ways to generate the broad-based income growth that those countries need to become better customers for U.S. exports, including U.S. agricultural exports. The World Bank confirms that most of the developing countries experiencing rapid income growth in the 1980s previously experienced rapid agricultural growth (World Bank 1996). Because so many people still live in the countryside in poor countries, it is often impossible to launch a successful industrial revolution without first investing in a broadly-based agricultural revolution.

U.S. farmers and farm exporters appreciate the need for trade expansion, and they generally understand the need to stimulate broad based income growth in poor countries, but they sometimes worry about the dangers of trying to do that by providing aid to farmers abroad, whom they tend to view as potential competitors. There are circumstances in which this worry would be fully justified. If USAID were to provide assistance to corn or soybean producers in Brazil or Argentina, the impact on U.S. corn and soybean farmers would be adverse, rather than positive. This is in part because corn and soybeans are temperate zone crops, but also it is because of the unfortunate structure of farming in Brazil and Argentina, where the income gains from improved production tend to be captured mostly by a narrowly based land owning and

agribusiness elite. In such countries where the income gains from farming are not widely shared, the higher consumption and import demands that should accompany agricultural success tend not to emerge.

But USAID does not provide assistance to corn and soybean producers in countries like Brazil and Argentina. In the countries where U.S. assistance programs have been active, gains in the agricultural sector have produced enough broadly-based income growth to ensure that the net effects on U.S. agricultural exporters will be positive rather than negative. A number of studies have reached this conclusion over the past dozen years, including Lee and Shane 1985; Kellogg, Kodl, and Garcia 1986; Houck 1987; Anderson 1987; and de Janvry, Sadoulet, and White 1989. Such studies have confirmed that helping poor tropical countries to launch an agricultural revolution can make them better customers for U.S. exports, including in the end U.S. farm exports.

A more recent confirmation of this important finding is presented in a 1995 IFPRI study by Pinstrip-Andersen, Lundberg, and Garrett. This study shows that about 20 percent of agricultural exports from industrial countries now go to developing countries, and that U.S. sales to these developing countries are expected in the years ahead to grow at roughly 9 percent annually, or roughly twice the rate of growth of sales to developed countries. Paradoxically, one of the drivers behind this import growth in developing countries is growth in the agricultural output of those countries. For all developing countries together, every extra dollar of agricultural output actually *adds* to agricultural imports, because agricultural growth helps push up personal income nation-wide, triggering more broad-based demand for food. Each dollar of added agricultural output means 73 cents more in total imports, 17 cents more in agricultural imports, and 7 cents more in cereal imports specifically. This paradoxical positive link is stronger in East Asia than in some other regions such as Latin America or South Asia. As noted above, agricultural growth in Latin America does not have the same broadly-based income multiplier effects as in developing country regions where land is more equitably distributed, and South Asia has in the past not been very open to trade. But everywhere these links are nonetheless positive (Pinstrip-Andersen, Lundberg, and Garrett 1995). The correlation also holds up within regions. A recent study done by USAID's Latin American and Caribbean region concluded that those countries which showed the largest increases in annual GDP were those in which the agricultural sector performance was improving because of sub-sector diversification initiatives. These were the same countries where trade with the U.S. (including exports of U.S. farm and agribusiness products) grew most rapidly.

U.S. non-farm exporters also benefit, of course, when agricultural development takes off in poor countries. Between 1990-95, due to more rapid growth in a number of agrarian-based countries, total U.S. exports to those countries

doubled to reach a level of \$243 billion, thus generating 1.9 million U.S. jobs across all sectors of the American workforce (Bathrick 1996).

Development assistance to farmers in poor countries is therefore not just compatible with the interests of those countries and with larger American values. It is also directly compatible with the long term interests of the U.S. economy, including the American farm sector itself. Helping to support an agricultural revolution in poor countries is usually the best first step toward helping to support a broadly-based industrial revolution, and it is only from the broadly-based income gains that accompany industrial development abroad that the American farm sector will be able to enjoy continuously expanding sales opportunities in the decades ahead.

V. The New Challenge in Development Cooperation

The historical record shows that U.S. foreign assistance, even when given mostly for cold war purposes, managed often to generate considerable development success, helping to pull people out of poverty and increase food consumption, all to the benefit of the export-dependent U.S. farm sector. With the end of the Cold War, the U.S. faces an opportunity to improve on this past record, by shifting a larger share of our assistance budget away from political or military support activities, and toward the economic development activities that can be more broadly beneficial to foreign income growth and hence to U.S. exporters of farm and non-farm products.

Unfortunately, the end of the Cold War has not brought any increase in U.S. development assistance activities. When the Cold War enemy in Moscow collapsed, the political inclination at home to support any kind of foreign assistance effort also declined. In mid 1993, a National Security Council study of foreign aid policy options stated flatly that "with the disappearance of communism in the Soviet Union and Eastern Europe, the bedrock support for foreign assistance has eroded significantly. There is no clear vision guiding the shape of our foreign assistance agenda for a world without the USSR." The several comprehensive visions that have since been suggested to support assistance (including "conflict prevention," "big emerging markets," and "global stewardship") have not yet caught hold. Consequently, U.S. assistance efforts have gone into a steep fall. Last year alone, according to the OECD, total U.S. official development assistance fell 27 percent, to just \$7.3 billion.

Under recent congressional projections, the U.S. international affairs budget (the so-called 150 account, of which two-thirds is foreign assistance) may be further cut by an additional one-third in real terms between now and 2002. President Clinton has now proposed a reversal of this downward trend (he is seeking a \$1.3 billion increase in the 150 account for FY 1998, above the \$18.2 billion that

Congress voted for FY 1997), yet Congress will have to be persuaded, and even with such an increase the 150 account would be about 25 percent less in real terms than the average during the decade of the 1980s.

These cuts have transformed the U.S. from a leader into a laggard among industrial countries engaged in development cooperation work abroad. U.S. development assistance is now only about half the amount provided by Japan, and less in absolute terms than the amount provided by either France or Germany. Relative to GNP, the U.S. development assistance budget is now the smallest in the industrial world. The U.S. ranks 21st among industrialized (OECD) countries - dead last - in providing development assistance abroad. Since 1970 the U.S. government has been pledged to provide 0.7 percent of GNP as official development assistance (a pledge reaffirmed as recently as 1992 at the UNCED conference in Rio), but the actual U.S. contribution has recently been just 0.1 percent, less than one third the ratio of most other industrial countries. Other industrial countries are impatient with U.S. excuses for this lagging performance. In Europe, where budget pressures are just as bad as in the U.S. and where domestic unemployment levels are currently much higher, governments have nonetheless been more willing to maintain their international development cooperation investments.

This lagging U.S. assistance effort is partly an outgrowth of the recent federal budget crisis. By 1993 the U.S. government's debt-to-GDP ratio had reached 56.9 percent, more than twice the level of two decades earlier, and serious efforts to attack the budget deficits generating this debt had to be undertaken. For political reasons these efforts could not focus on cutting entitlement spending (Democrats would object), or on restoring lost tax revenues (Republicans would object), so pressures grew to cut spending elsewhere, and in a post-Cold War environment foreign aid naturally became an inviting target. All the more so because the international affairs budget was placed within the "non-defense discretionary funding" category (the 17 percent of the U.S. federal budget which, under a 1996 deficit reduction agreement, had to absorb nearly one half of all spending reductions). The prejudicial quality of these budgeting procedures became apparent in 1996 when the same U.S. Congress that was cutting development assistance by \$2.6 billion in a single year actually voted to *increase* defense spending. The House voted to increase the Administration's request for defense by \$11 billion for FY 1997.

Public misinformation is another reason for the recent excessive cuts in foreign assistance spending. A University of Maryland poll shows that the American people erroneously believe that 15 percent of the federal budget goes to foreign aid, when the actual figure is only one percent. A *Washington Post* poll revealed that the American people thought more was spent on foreign aid than on Medicare, when in fact the foreign aid budget is less than one twentieth the Medicare budget, and shrinking rather than growing. If the American people

could appreciate how modest and affordable our foreign development cooperation efforts have actually been in budget terms, they would be less likely to support the current congressional inclination to shrink those efforts still farther.

Popular mistrust of government has become another powerful cause of diminished political support for foreign assistance. The American people are not becoming any less concerned about poverty abroad, or any less generous in their desire to do something about it, but it seems they are less ready to believe that spending money through their federal government is an effective way to attack poverty. Large numbers of Americans have come to be convinced that public sector bureaucracies are not as good as private sector institutions (including business firms, and also non-profit PVOs) in taking on practical tasks. A survey taken in 1972 showed that 53 percent of Americans still trusted the government to do what is right "most of the time," but by 1986 only 39 percent of Americans felt that way, and by 1992 only 27 percent felt that way (Shively 1995, p. 124).

One of the most puzzling and frustrating features of the recent collapse in U.S. foreign development cooperation spending has been a sharp cut in funding provided specifically for agriculture. Between 1989 and 1994, while the nominal value of total U.S. economic assistance through USAID remained roughly constant (at about \$6 billion), the value of assistance to agriculture declined in nominal terms by 48 percent, from \$806 million down to just \$418 million (USAID 1996). USAID's agricultural work was being cut early in the 1990s partly because the agency was now targeting several other objectives - including the slowing of population growth, women's health, environment, democratization, and micro-enterprise development. These are worthy objectives, but it must be remembered that they cannot be pursued *in rural areas* without a strong program in agriculture. Rural women's health and welfare in Africa depends heavily on productive and profitable agriculture, since women make up the majority of Africa's farmers. Microenterprise development in rural areas usually means supplying inputs to farming or providing storage, transport, and processing for products from the farm. Rural environmental protection will be impossible if farming is not prudently intensified. So any future U.S. development cooperation program that downplays agriculture will be a program certain to exclude the well-being of large numbers of rural citizens in poor countries.

One unfortunate reason for diminished U.S. support for development cooperation in agriculture has been the loud voice of one school of environmental activism (Easterbrook 1997). A vocal minority of activists within the environmental community opposes further investment in rapid economic growth abroad (income growth based on industrial development is seen as "non-sustainable") and within the farm sector some of these environmental groups have embraced an extreme vision of low-input subsistence farming, one

which rules out efforts to boost farm income through yield-enhancing purchased inputs, even though such inputs were a key to the success of the green revolution in India thirty years ago. These activists also oppose any switch from subsistence to export crops, even though export crops (such as those which are key to the NTAE success in Latin America in the 1990s) often do less damage to fragile lands and give small farmers more income.

Environmental activists are correct to be concerned about excessive farm chemical use, but this is more of a problem in rich industrial countries than in poor countries. Excessive input use is a problem in industrial countries where farm production tends to be subsidized, more than in the developing world where farmers still tend to be heavily taxed by government policies. In developing country regions such as Africa, environmental damage from farming tends to grow from a pattern of purchased input use which is inadequate rather than excessive. Fertilizer use per acre in Africa is only one quarter the level of India, and only one-thirty-sixth the level of Japan. It is only by increasing yields per acre - in part through purchased inputs - that Africa's farmers will be able to avoid further deforestation and further plowing of fragile lands in the years just ahead.

India's experience (and the experience of much of the rest of Asia) during the green revolution of the 1960s and 1970s can be used to illustrate this point. If India had relied on traditional low-yielding seed varieties and farming techniques to try to increase its total production to feed its growing population in the 1960s and 1970s, it would have had no choice but to clear more land, cut more trees, destroy more wildlife habitat, ruin upper watersheds by planting crops on sloping lands, or plow up more dry lands with fragile soils. In 1964, India produced 12 million tons of wheat on 14 million hectares of land. By 1993, thanks to the green revolution, it was producing 57 million tons of wheat on 24 million hectares of land, allowing its much larger population to be somewhat better fed. To produce this much wheat using at the 1964 yield level (using pre-green revolution seed varieties and technologies), India would have had to plant roughly 60 million hectares. In other words, the green revolution allowed India to meet evolving food needs *without* plowing an additional 36 million hectares of cropland for wheat. "Thanks to plant breeding," concluded M. S. Swaminathan, at India's Centre for Research on Sustainable Agriculture and Rural Development, "a tremendous onslaught on fragile lands and forest margins has been avoided." (Swaminathan 1994).

Foreign development cooperation programs have helped protect the rural environment in other ways as well. International (including USAID) support for integrated pest management (IPM) practices has helped a number of developing countries reduce dependence on potentially dangerous pesticides. Technical assistance in "precision farming" helps to reduce excessive applications of chemical fertilizers. The trade policy reforms promoted by the U.S. government

have also helped protect the environment in some developing countries from unsound agricultural practices. By encouraging nations such as Korea and Taiwan to open foodgrain markets (especially rice) to imports, U.S. trade negotiators have helped ease the adverse environmental impact of chemical-intensive rice production in these countries. Compared to the U.S., Korea uses four times as much fertilizer per acre of cropland and Taiwan uses five times as much.

Some of the reasons that seemed persuasive in the past for cutting international cooperation programs in agriculture are now quite suspect. One of these is a supposition that arose when international commodity prices collapsed in the mid 1980s, the supposition that "we have solved the world food crisis." This collapse of international commodity prices in the mid 1980s was more the result of a world recession than it was an indication that food problems were being solved. In fact, the world recession and debt crisis of the mid 1980s led to a significant *increase* in poverty and unemployment (and hence hunger) in many developing countries, especially in Latin America and Africa. The deeply depressed international commodity prices of the mid 1980s are for the moment no longer with us in any case, and FAO projects that with or without low international prices the total number of chronically undernourished people in Africa will *increase* over the next two decades, from 175 million to 296 million by 2010.

Another suspect explanation for cutting international cooperation programs in agriculture is the frequently heard argument (it is an especially strong refrain among some inside the World Bank) that "agricultural projects tend to fail." Those that make this charge are looking at old numbers, and often at the wrong numbers. The proportion of World Bank projects in agriculture that failed in the past was indeed higher than in other sectors, but failure rates *per dollar invested* were respectably low for agricultural projects, at least everywhere except Africa. The economic rate of return on all agricultural project lending evaluated by the World Bank between 1967 and 1987 was 17.8 percent, almost identical to the Bank-wide average of 17.9 percent (Lipton and Paarlberg 1990). Many of the agricultural lending projects that failed in Africa and Latin America in the 1970s and 1980s were complex, large-area "integrated rural development" projects of the kind that are no longer being undertaken. And today the World Bank is justifiably proud of the performance of its agricultural projects. In fiscal 1996, 78 percent of completed agricultural projects at the Bank were rated satisfactory, which is 10 percentage points above the Bank average for projects in all sectors (World Bank 1996). Public policy perceptions clearly have not yet caught up with all of these realities. U.S. development cooperation policies should be building on past success, and should be helping to create the broad-based income growth in poor countries that will be essential for U.S. agricultural success in future years, but instead those policies have been threatened with dismantlement.

VI. The New Challenge in Trade

Open trade policies will also be critical if prosperity abroad is to produce gains for U.S. agriculture at home. NAFTA in 1993 and the Uruguay Round in 1994 produced strong gains in the opening up of foreign markets to larger U.S. farm exports (for a summary of these gains, see Sek and Hanrahan 1996). But much more remains to be done in implementing these agreements, and in negotiating further market opening agreements elsewhere in the Western Hemisphere, across the Pacific, and with Europe. A NAFTA enlargement to include Chile, and a Free Trade Area of the Americas (FTAA) are waiting to be negotiated; the new dispute settlement powers of the WTO are now waiting to be used by the U.S. to maximum advantage; and in the WTO a new round of negotiations on agriculture, due to start in 1999, is already in preparation. The issues that might be addressed in this new negotiating round could include increased market access, further reductions in market-distorting domestic supports for agriculture, new disciplines on export subsidies, and better defined, scientifically justified sanitary and phytosanitary (SPS) import barriers. One issue that this next round might address, from the vantage point of U.S. agriculture, will be the issue of state trading entities (STE), such as the Canadian Wheat Board. The characteristics of these STEs give them considerable potential to distort markets through monopsony/monopoly powers, hidden subsidies, and hence export price distortions. The Uruguay Round agreement did not do enough to discipline STEs. In the next round an opportunity will exist to bring the transactions of STEs under greater discipline, or at least make them more transparent.

In the face of this full and promising agenda of new trade policy opportunities, U.S. leadership on trade has unfortunately faltered. In the aftermath of the Mexican peso crisis of 1994-95, populist sentiments against additional free trade measures temporarily became stronger within both parties. Efforts to restore the President's "fast track" negotiating authority (a necessary congressional action, if U.S. negotiators are to be credible in talks abroad) have so far been unavailing. Democrats in Congress won't renew fast track authority unless it is broad enough to make possible the negotiation of parallel guarantees on labor or the environment, while Republicans in Congress believe that further progress toward trade liberalization should not be held hostage to such guarantees.

To keep U.S. trade policy on hold because of memories of the 1994 Mexican peso crisis is illogical. That crisis (which is now largely repaired in any case) was not caused by NAFTA. It was the result of mismanagement of domestic credit by the central bank of Mexico. If NAFTA had not been in place in 1994, Mexico might have responded to this crisis in an even more damaging fashion, by raising import tariffs (just as it did in the earlier 1982 crisis). It is also illogical to allow U.S. trade negotiators to remain paralyzed by partisan differences over a

broad versus narrow reauthorization of fast track authority. Trade policy should be fertile ground for bipartisan cooperation, as it was when a Democratic Congress gave broad fast track authority to a Republican President in 1988, and when Republicans in Congress helped a pro-trade Democratic President secure implementing legislation for NAFTA and the Uruguay Round Agreements in 1993 and 1994.

In the area of trade policy, it is not only barriers abroad that need to be lowered, of course. Poor countries abroad will not be able to grow and become better customers for U.S. exports (including farm exports) if they are denied reciprocal access to U.S. markets. By some estimates, industrial country tariffs and non-tariff trade barriers now cost developing countries \$40 billion a year, which is equal to two-thirds of the total dollar value of all development aid from the industrial countries. In 1994, ten thousand African workers lost their jobs when U.S. trade officials placed restrictions on imports of shirts and pillowcases from Kenya. If the U.S. had behaved this way toward the successful infant textile manufacturers and exporters of East Asia thirty or forty years ago, that region of the world would not be the development success story it is today, or the good customer that it is today for U.S. agricultural exports. Enlightened trade and development cooperation policies thus must apply to all if they are to work well together.

VII. Responding to the Development Challenge: Improving Delivery Systems

Popular support for U.S. development cooperation policy will be hard to secure without a significant redesign of the institutional "delivery system" currently being used to promote development abroad. The system currently in use is unsatisfactory, for a number of reasons:

- *Too Much Central Regulation.* USAID headquarters hampers its own field staff with too many top-down regulations. In USAID's recent reduction in force, it is unfortunate that senior staff in Washington were cut less than junior staff in the field. Senior staff retained in Washington must make work for themselves, so they over-regulate the activities of a dwindling number of junior colleagues in the field.
- *Too Much Congressional Micro-management.* Congress hamstrings and overburdens USAID by establishing too many competing objectives. A 1989 report from the House Foreign Affairs Committee actually identified 33 different and independent *statutory* goals and objectives for USAID and (believe it or not) 75 different "priority" areas. Congressional earmarking is also a burdensome practice. As of FY 1993, approximately 57 percent of Development Assistance (DA) from USAID and 84 percent of the Economic Support Fund (ESF) and 96 percent of Foreign Military Financing (FMF) was earmarked. Sometimes it is the non-responsiveness of the USAID

bureaucracy that forces Congress and outside groups to resort to the earmarking approach, but it is an unfortunate approach all the same, since it gets in the way of flexible decision making. Earmarks take discretionary authority away from officials on the scene and generate irrationalities in the expenditure of funds. Congress decided many years ago that it should not try to micro-manage U.S. monetary policy (when it created the semi-autonomous Federal Reserve Board), and it later reached the same conclusion in the area of U.S. trade policy (when it created the semi-autonomous Office of the U.S. Trade Representative). Regrettably it has not yet overcome the temptation to micro-manage U.S. development cooperation policy abroad.

- *Difficulties Cooperating With the Private Sector.* USAID's excessive headquarters regulation, inflexibility, and congressional micro-management is especially damaging when it hampers efforts to cooperate with private U.S. companies, universities, and PVOs. In the field, PVOs lose patience and give up when they discover that the local USAID representative has no discretion to provide funding for good new proposals, or can only provide funding after a long delay, or can only provide funding with onerous strings attached, such as impossible reporting or procurement requirements. Contracting partners in the U.S. pull out their hair when USAID forces them into a wasteful and repetitive competition with each other, responding to thick, turgid, innovation-killing and overly-specified RFPs. Even if a contractor wins this competition, it will then face such delay and uncertainty in getting the money that staffing and budgeting efforts will be a shambles. Private U.S. business firms that must move fast to seize profitable investment opportunities can't accommodate USAID's sluggish response time, and are often exasperated to learn just how constrained the U.S. government has become (in contrast to governments in Europe, or Japan) in working cooperatively with U.S. business corporations.
- *Too Many Short Term Diplomatic and Security Constraints.* Yet another source of institutional trouble with the U.S. development cooperation delivery system is the persistent intrusion of short-term diplomatic and security concerns. Even in today's post-Cold War environment, State Department and Defense Department concerns have an unfortunate way of swamping the Administration by assistance professionals of long-term development cooperation efforts. A large part of the USAID budget is not allocated with economic growth purposes in mind, but rather in pursuit of military security or short term diplomatic cooperation. These are worthy purposes on their own terms, and sometimes they can provide a substantial collateral boost in the area of broad economic development (for example in Korea and Taiwan, as noted above), but they can also get in the way of a sound development strategy. Development cooperation has to work over the long term, and the long view can be disrupted if assistance funds are extended or withdrawn in response to short term diplomatic or security priorities. Development opportunities can be lost if funds that could be going to nations or regions with rapid income growth potential are hijacked instead to help finance

international security efforts or diplomatic understandings. The Vietnam War badly distorted the global distribution of U.S. assistance funds in this fashion in the 1960s and 1970s, and since the late 1970s an open ended priority given to financing peace agreements in the Middle East (at a cost of roughly \$5 billion a year to support the twenty year old Camp David agreements) has left fewer funds available for priority development cooperation work elsewhere.

- *Too Little Coordination With Other Agencies.* A fourth source of institutional trouble has been poor coordination between USAID and other U.S. government agencies such as Commerce, Agriculture, and most of all the Treasury Department, which takes the lead in managing U.S. contributions toward international financial institutions such as the World Bank.

Reacting to this summary view of existing flaws, at least three large objectives should be pursued in any effort to redesign U.S. foreign development cooperation institutions: an increased capacity to build wide-ranging development cooperation partnerships, a reduction in congressional micro-management, and a reduction in subordination to short term diplomatic concerns.

Closer Partnerships

All core U.S. development cooperation agencies (starting with USAID) need to increase their capacity to form closer partnerships and alliances with other U.S. government agencies, with multilateral organizations, with other donor governments, with recipient governments, with private U.S. firms, and with U.S. PVOs (plus the larger networks within which those PVOs operate). We shall describe, below, what some of these improved partnerships might look like, especially with business firms and PVOs. But to form these partnerships, USAID must make itself a more inviting institutional ally. It needs to develop a stronger capacity throughout for flexible, autonomous action, and it needs to free up its field officers from excessive headquarters regulation. It needs to stop over-specifying program design, and be quicker and more flexible with its commitment and delivery of financial resources. It needs to be less squeamish about entrusting a part of the development cooperation task to profit-making U.S. companies. USAID tells recipient governments to trust the private sector, but too often it distances itself from - or seeks to over-regulate - its potential partners within the U.S. private sector. And it needs also to learn how to network more effectively, both at headquarters and in-country, with U.S. PVOs and the larger PVO community. USAID officials today spend too much time advancing and protecting their careers through network-building activities within the corridors of the agency itself, and not enough time building alliances and partnerships with PVOs, with investors in the private sector, and with officials in allied agencies or organizations.

Reduced Micromanagement from Congress

A second large institutional reform objective, corollary to the first, must be to reduce the degree of USAID micro-management by Congress. The encrusted language of the original Foreign Assistance Act needs to be revised to include more explicit support for trade, environment, and equity. Statutory program objectives should be described in less burdensome number and detail.

Appropriations earmarks should be minimized, and reporting requirements should be made less onerous. Also, Congressional oversight of USAID should be conducted more often at a distance, and more by the substantive authorizing committees of Congress (Foreign Affairs and Foreign Relations), and less by the appropriations committees. The annual appropriations process tends to reflect short-term perspectives of non-specialist members who may have only district or partisan concerns (or at best only budget number concerns) in mind. Ideally, U.S. development cooperation policies should be funded from a longer term perspective, either through a long term institutional grant, or through self-replenishing instruments such as revolving funds.

Reduced Dictation from the Foreign Policy Community

A significant portion of U.S. assistance abroad during the Cold War went through the Economic Support Fund (ESF). The ESF provided U.S. diplomats with the "walking around money" they needed to round up allies in the battle to contain communism. With the end of the cold war, these funds have been cut steeply, and an opportunity has arisen to free the rest of the U.S. development cooperation budget from the often damaging effects of short term fluctuations in U.S. diplomatic relations abroad. Short-term diplomatic conflicts with foreign governments over human rights violations, drug trafficking, or nuclear weapons programs should not have to get in the way of longer term development cooperation efforts. These efforts can be designed to promote private markets and boost the health, welfare, and income of poor citizens, not the governments of those citizens. When long term development cooperation efforts are interrupted as a consequence of short term diplomatic difficulties, those diplomatic difficulties are frequently worsened in any case.

ESF activities might appropriately remain under the direction of the U.S. diplomatic community, but other development cooperation activities, if they are to be successful on their own terms (and if they are to attract a sufficient number of partners from the private sector, from PVO networks, and from the multilateral assistance community), deserve a degree of insulation from the daily business of diplomacy. The U.S. agricultural community should be especially sympathetic to this requirement, since it has been damaged in the past by excessive foreign policy dictation. The 1980-81 grain embargo, imposed on U.S. agriculture by the foreign policy community, did little to punish the Soviet Union (for its invasion Afghanistan) yet the embargo created for U.S. grain

exporters a long-term credibility problem in the minds of potentially valuable foreign customers who did not wish to make themselves vulnerable, in the event of future diplomatic difficulties, to a possible renewal of foreign policy driven embargo tactics.

Whenever it is suggested that U.S. development cooperation programs should be given greater insulation from U.S. diplomatic operations, some friends of those programs worry that the broader political coalition that has helped generate congressional support for these programs could become split or weakened. Perhaps Congress, if not given an integrated budget for all international affairs activities, might begin selectively to fund just aid for the Middle East, while imposing even deeper cuts on real development cooperation elsewhere. This is a significant concern, yet there are just as many tactical arguments on the other side.

A complete subordination of development cooperation policy to diplomatic calculations is currently the preference of some leaders in Congress. We believe this approach would bring serious costs. Development cooperation activities need greater independence from the State Department, not greater subordination.

VIII. Institutional Change: Long Term and Short Term Goals

The long-term objective should be to redesign USAID as a more independent institution, less burdened by congressional micro-management, less hampered by short term diplomatic calculations, and better able to partner with other public and private sector institutions. A number of specific reorganization proposals are now circulating that would seem to meet these requirements. For example, the Overseas Development Council has recently proposed housing bilateral U.S. development assistance in an International Development Foundation, an operational grant-making entity that would focus on a limited set of achievable development challenges jointly agreed on by the Executive Branch and Congress. To make this foundation attractive to potential partners, and to give those partners a healthy measure of "ownership" in program activities, the grant-making process would be substantially demand driven.

Some prominent agriculturalist reform advocates are also on record supporting elements of this approach. Professor Vernon Ruttan of the University of Minnesota has proposed moving the bulk of USAID's bilateral economic development and humanitarian assistance activities into *two* new semi-autonomous entities, one designed to foster sub-contracting partnerships with universities, research institutes, and relevant departments of other U.S. government agencies (e.g. Agriculture, Commerce, EPA), with funding provided not through annual appropriations but through a long-term institutional grant,

and the other designed to build partnerships with PVOs and private firms, funding programs on a competitive bid basis. Ruttan points to the success of a number of public foundations already in existence, including the Asia Foundation, the Inter-American Development Foundation, and the African Development Foundation, as precedents that lend credibility to this approach (Ruttan 1996).

Such proposals envisioning a semi-autonomous entity for delivering development cooperation policy have periodically enjoyed a significant degree of support in Congress. In 1989, a bipartisan proposal not so different from the Ruttan proposal actually came close to being enacted into law. The International Economic Cooperation Act (H.R. 655) was passed the U.S. House of Representatives by a 314-101 margin. The House bill did not go as far as might be preferred in reducing the practice of country and program earmarking, or in transferring funds from ESF to genuine development assistance, but it did place heavy stress on partnerships with PVOs, universities, and the private sector. This measure later failed to become law when a parallel authorization bill never reached the Senate floor for a vote.

The long-term goal, over the next several years, should be to rebuild a consensus for this nearly successful move toward increased institutional flexibility and independence at USAID. In the political climate of 1997, however, it seems unlikely that such a move could gain support from the key congressional committee chairs and executive branch officials needed to ensure success. In the political climate of 1997, it might be unwise to embark upon a radical dismantling of the existing institutional structure at USAID, since there are those in today's Congress that seem to prefer a development agency that is even weaker and less independent than the one we currently have.

As a short term strategy, therefore, we prefer to press changes onto USAID administratively, or through a reprogramming of funds in the direction of the various partnering activities we are describing here, rather than legislatively through a complete rewrite of the Foreign Assistance Act. We believe there are abundant short-term opportunities to engage administratively in this sort of redirection and reprogramming.

IX. Opportunities to Move Toward Partnership

We have stressed the importance of creating a development cooperation delivery system that enlarges the space available to form alliances or partnerships with other public sector agencies at home and abroad, and between the public and the private sector. Why are such partnerships attractive, and, in practice, what might these partnerships look like? Different partners might be attractive for different reasons and purposes.

Multilateral Agencies

The reasons to partner with multilateral agencies are mostly financial. Small U.S. initiatives taken through multilateral institutions, such as the Consultative Group on International Agricultural Research (CGIAR) or the International Development Association (IDA) inside the World Bank, can leverage parallel contributions that might not otherwise be made by other wealthy country governments, in Japan and Europe. This is an opportunity currently being underutilized. In 1996, only about 10 percent of U.S. aid resources went through multilateral agencies. The Overseas Development Council and others strongly support multilateralization. Other donors have been more aggressive than the U.S. in capturing multilateral funds to support their own specific interests (specifically to support employment of their own nationals as consultants), but this is a problem that might be more easily addressed if the U.S. role working with multilateral agencies were enlarged.

The imperative to leverage internationally is strong. Worldwide, the U.S. now provides only about one-sixth of the total volume of official development assistance, and can have much greater influence over the remaining five-sixths if it works through multilateral institutions. Within the World Bank, U.S. leverage is now being lost due to reduced U.S. contributions to the International Development Agency (IDA), the long-term low interest loan window at the Bank. For FY 1997, President Clinton requested \$934 million for the IDA, but Congress approved only \$700 million. U.S. failures to honor earlier commitments to the IDA actually resulted in the exclusion of some U.S. companies from participation in IDA projects, confirming that there can be a direct cost to U.S. interests from non-cooperation in multilateral settings.

The World Bank is also an attractive partner on financial grounds because of the vast lending resources it can mobilize at no cost to U.S. taxpayers, when it borrows funds from private international capital markets. It is these financial strengths, in part, which make multilateral financial institutions the best venue in which to pursue the most expensive "bricks and mortar" aspects of development cooperation policy abroad. Also the "policy dialogue" dimension. Borrowing countries that need to reform their policies are more likely to listen if the reform steps requested are conditions for large World Bank loans, rather than conditions for the much smaller bilateral transfers that USAID can afford. For such reasons, close partnership relations with multilateral agencies and lending institutions are a necessary foundation for U.S. development cooperation success abroad.

Building these partnerships is currently difficult in part because it is the Department of the Treasury, not USAID, that takes the lead in managing U.S. relations with multilateral development banks. Some (such as the Overseas Development Council) have advocated giving this management function to

USAID. This is desirable, but politically unlikely. A more probable remedy would be to redesign interagency (and inter-branch) procedures. One suggestion is to form a "MDB Agriculture Task Force," composed of representatives from USDA, Commerce, USTR, USAID, and staff from relevant House and Senate committees, to meet every two months so as to remain abreast of Treasury/MDB policy initiatives (Bathrick 1996). In partnering with MDBs, USAID brings an important resource to the table: a continuous in-country staff presence at many locations in the developing world. Many MDB activities are currently undertaken with little local knowledge on a thin foundation of information gained only from brief on-site consultations. While USAID is leveraging MDB financial resources, MDBs can thus be leveraging USAID field staff expertise. Particularly if the USAID field staff in question are also actively partnering with U.S. private companies, universities, and PVOs, all will gain as a result.

Some non-MDB multilateral agencies are also useful partners, even though they may not have significant financial resources. The Food and Agriculture Organization (FAO) of the UN, although at times maligned for its bureaucratic procedures and frequent lack of accountability, can help supplement U.S. development cooperation efforts to good effect in a number of specialized areas. For example, it was through the plant protection division of FAO that the U.S. government (with leadership from EPA as well as USDA) helped broker an important agreement on safe use of pesticides (the Prior Informed Consent provision of FAO's Code of Conduct on safe pesticide use), a rare instance in which common ground was established between private international agrochemical industries and the activist international environmental movement. FAO has also been instrumental in helping to promote environmentally friendly integrated pest management (IPM) techniques, especially in East and Southeast Asia, where insecticide use poses a serious environmental and human health threat.

Other U.S. Government Agencies, including State Governments

The reasons for USAID to partner with other agencies of the U.S. government and also with state government are self-evident. Many U.S. cabinet departments (including Agriculture) already have a significant embassy-based presence abroad and substantial program activities in numerous areas linked to development cooperation. The USAID of the future should look beyond its own corridors and imagine partnering or alliance opportunities with these other U.S. government agencies. The job of international development cooperation is a big job, and should be done abroad by a wide mix of U.S. government agencies including Commerce, Agriculture, Treasury, USTR, EX-IM, OPIC, Peace Corps, EPA, NIH, Interior, and HHS. State governments also invest heavily in promoting technical exchange and trade, and should be included in the larger set of partnerships used to promote development cooperation abroad.

One recent example of what other government agencies can do in the development cooperation area is a new food aid monetization activity in Cote d'Ivoire, in which USAID plays only a minor role alongside USDA's Food for Progress program, and a PVO, Winrock International. Winrock sells USDA donated dark northern spring wheat in Cote d'Ivoire, and uses the proceeds for both market development and economic development, including support of the bread baking industry, training of bakers, and also the education of women in agriculture and environmental sciences. Through this partnership between USDA, and a U.S.-based PVO, multiple objectives can be more effectively pursued. USAID should encourage such activities by other agencies, as a means to escape the constraints presented by its own limited budget resources.

Reasons to Partner with Foreign Governments

U.S. development cooperation work abroad will be most successful if it is done with foreign governments that feel themselves to be "invested" in the process. The OECD has stated the goal in plain language: "Acceptance of the partnership model... is one of the most positive changes we are proposing in the framework for development cooperation. In a partnership, development cooperation does not try to do things for developing countries and their people, but with them. It must be seen as a collaborative effort to help them increase their capacities to do things for themselves. Paternalistic approaches have no place in this framework." (OECD 1996, p. 14). This means that these foreign governments need to be brought into the formulation of policy at an early enough stage to feel a sense of ownership, and it means that USAID overseas personnel need to be freely empowered to develop this sort of relationship with foreign government counterparts. USAID personnel are already formally "accredited" to other governments, giving them vital access to key ministries, but too often they are hampered from seizing opportunities because of top heavy intrusions from Washington, and because of stifling procedural requirements, even when only small amounts of money are involved.

Reasons to Partner with PVOs and Universities

Reasons to partner more extensively and more effectively with U.S. PVOs and universities are abundant. As USAID sees its own resources diminishing, it should seek opportunities to make more effective use of PVO networks around the world. PVO personnel are often highly motivated and well informed about the needs and circumstances of grass roots communities in developing countries. They are often better trusted than official government personnel in rural areas, and better able to work across the political dividing lines within countries that can paralyze public sector development or relief efforts.

Partnering with PVOs and universities can best be accomplished on a case by case basis in-country, by USAID officials given enough authority to respond to good project and program ideas generated within local PVO networks. Moving USAID toward the model of a grant-making foundation, the long run goal stated above, could increase local partnering opportunities dramatically. In making funding decisions the U.S. representative would respond to locally generated proposals, assess the quality of the program (or innovation), its potential spread and sustainability, the special needs of intended beneficiaries (women, children, vulnerable groups), benign environmental effects, the commitment and caliber of the leadership of the PVO both in the U.S. and in the cooperating country, and other criteria. A "portfolio" of programs could be built with resulting impacts that Americans as a whole could be proud of.

Grants would be made on a competitive basis involving experienced and responsible country nationals. Necessary host government approvals would be sought, but the funding process should be as independent of government management as possible once agreement is reached on the merits of an initiative. Grants might be for 5-10 years, with periodic reviews during this time, reviews that could terminate the grant if funds are not being used as agreed or the innovation is not demonstrating sufficient payoff.

Such an approach to development cooperation would be facilitated by a continuing U.S. official presence in cooperating countries, but not the kind of high unit-cost presence exemplified in today's USAID missions. A selected cadre of development professionals who have language, cultural, and other skills relevant to working with counterparts in the particular country could evaluate proposals and then facilitate partnership activities at relatively low cost to U.S. taxpayers. Not all development efforts should be at the grass roots, of course. There are many investments waiting to be made in infrastructure and institutional capacity that only the public sector can finance. But if partnering opportunities with grass roots PVOs and private sector firms are missed, public sector investments alone will fall short.

Reasons to Partner with Private Investors

Reasons to partner with private investors are compelling. Private investments are an all-important source of development support throughout Asia, Africa, and Latin America. While official governmental aid (from all countries) has stagnated recently at \$55 billion to \$65 billion annually, private investment in the developing world reached \$167 billion last year, up from \$44 billion in 1990. Public resources have declined from providing (as late as the 1980s) three-quarters of external financing to development, to less than one quarter today. Any U.S. development cooperation effort that fails to work with and help shape these increasingly important private investment flows will steadily lose relevance.

As one example of an effective use of private sector resources, consider the U.S./Newly Independent States (NIS) Agribusiness Partnership, a joint ventures program begun in 1992, through which some 22 agribusiness partnerships have now been initiated with support from two USAID guarantees. The ratio of government to private financing is roughly 1 to 3.5, indicating a substantial leveraging of private resources. In twelve of these joint ventures so far, satisfactory to excellent results have been achieved in the development of long term business relationships designed to increase food availability and quality in the states of the former Soviet Union (five have experienced implementation problems, and the rest are too new to be evaluated). The focus of these partnerships is on technical assistance and transfer of western management skills through training on-the-job and short-term, in areas such as meat processing and marketing, potato production, and corn processing and feed mill manufacture.

By themselves, private investment flows may not have adequate reach into the poorest regions (often the countryside) of the poorest countries. Three-quarters of all private money going into the developing world goes to just a dozen or so favored countries. Official agencies such as the International Finance Corporation (IFC) of the World Bank and the U.S. Overseas Private Investment Corporation (OPIC) deserve support from Congress in their efforts to promote, through inexpensive investment guarantee programs, increased investment in less favored nations and regions. USAID (or its successor agency) should join in this effort, learning from these agencies how it also can design better partnering relationships with the private sector.

None of this stress on partnering relationships is intended to deny the irreplaceability of some more traditional bilateral or multilateral "government to government" development cooperation measures. There are some necessary ingredients in the development process (e.g., rural roads, school systems, irrigation management institutions, better state policies) that PVOs are not equipped to provide and that private sector actors have little incentive to provide because these ingredients are, in their essence, "public" goods. But once these public goods are in place, development cooperation efforts should concentrate on mobilizing PVO networks and private sector investments.

The public/private sector partnering model we are describing here is not the same thing as "tied aid," of the kind widely used by Japan and long opposed by many in the U.S. assistance community. Aid given with a "buy American" tie-in is trade-distorting, and looks too much like corporate welfare. We are, however, advocating an inclusion of the private sector in U.S. development cooperation policy strategies.

X. Parallel Trade Policy Responses

If U.S. agriculture is to benefit from future economic growth abroad, trade policy reforms will also be needed. A first step should be prompt renewal of "fast track" negotiation authority. Fast track procedures have been a key to the successful conduct of U.S. trade policy ever since 1974, when Congress first made them available to the President. They allow U.S. trade officials to negotiate with credibility abroad because they specify that any agreement reached will either be approved or rejected by Congress *without amendment* (in a single deadline-driven, limited-debate, up-or-down vote). Without fast track guarantees, foreign governments will be reluctant to offer any concessions to U.S. trade negotiators, for fear that Congress will ask for still more concessions after the "final" international bargain has been struck.

Congress has known for years (ever since the disastrous Smoot-Hawley Tariff Act of 1930) that it should not attempt to micro-manage trade policy. And it has known at least since the 1960s (when it created the semi-independent Office of the U.S. Trade Representative) that it should not try to micro-manage the conduct of trade negotiations. Unfortunately Congress seems to have forgotten, since 1994, the importance of allowing presidents to submit negotiated agreements for ratification on a clean up-or-down basis. Unless fast track authority is renewed by Congress, the next round of trade talks will have to be postponed and the significant follow-on trade expansion opportunities that are now waiting to be captured for U.S. agriculture will be lost.

The fast track renewal debate has recently been paralyzed by partisans in Congress catering to groups holding opposing positions on labor and environment issues. Democratic partisans have insisted that any renewal of fast track must come with guarantees that future trade agreements will provide extraordinary protections for labor and the environment. Republican partisans have insisted that labor and environmental protection issues should play no role in future trade negotiations. So long as this paralysis continues, both sides will lose. There will be no new international protections for labor and the environment, and no new market opening trade agreements. One attractive escape from this paralysis would be to renew in 1997 the same kind of fast track authority given to President Bush by a Democratic Congress in the 1988 Trade Act, authority which is flexible in that it neither prohibits nor requires labor and environment conditionality. This bipartisan approach brought results in both NAFTA and the Uruguay Round and should be considered as a worthy approach to ending the current trade policy blockage.

While trade negotiators should be empowered to pursue the goal of opening markets abroad for U.S. farm exports, USDA officials also have a role to play - often in partnership with the private sector - in the promotion of those exports. The resources and instruments of export promotion currently available to the

USDA are considerable. USDA is even accused, on occasion, of operating an export promotion program that is disproportionately large compared to programs in other sectors, and of operating programs that violate free market principles, or that provide undeserved "corporate welfare" benefits to U.S. companies. Our working group held a range of views on USDA's proper role in export promotion. A majority believed that most currently used export promotion instruments should be retained, but most also agreed that some discipline and rebalancing in the use of those instruments was in order. We would prefer to see budget dollars spent on real market development programs - especially for high value products - rather than on the direct subsidization of lower-value bulk commodities.

Many in our working group believed there was justification for investing public funds, in partnership with the private sector, in the development of additional markets for U.S. farm products abroad, especially high value products. Public support for dietary diversification and improvement in foreign countries is good for both foreign development and for U.S. agriculture. Several existing programs (including the Market Access Program - or MAP - and the Foreign Market Development Cooperator Program - or FMD) operate in a partnering fashion, build future markets, and deserve to continue. The objective of these programs is to acquaint potential customers, especially in high income growth regions such as East Asia, with the full mix of high value farm products that U.S. producers, processors, and exporters have to sell. Critics brand these programs as "corporate welfare" (the same criticism that has been leveled at OPIC), yet claims can also be made for their success (exports of California wine, promoted through this program, have increased dramatically over the past ten years). If disciplined and well-managed these programs they can represent a responsible partnership effort between the public and the private sector. These programs do not distort trade; the new Uruguay Round agreement on agriculture recognizes as much by placing them in the unrestricted "green box"). And the dollar cost to taxpayers is relatively small. The MAP is currently being funded at less than \$100 million a year.

We are less certain that the taxpayer's marginal dollar should be spent on high volume direct export subsidy programs, such as the Export Enhancement Program (EEP). Most of the benefits of direct export subsidies are captured not by U.S. farmers, or even by foreign food consumers, but by foreign governments. Under EEP, foreign governments (for example, the government of China, or the government of Egypt) can get the U.S. commodities that they would have purchased anyway at an artificially low price. And when extra U.S. sales abroad are generated by EEP, the result is not always good for U.S. producers. In recent years the use of EEP to expand U.S. wheat sales abroad has brought a perverse result: larger sales of Canadian wheat to the U.S. We believe it is unfortunate that USDA has historically spent so much more on EEP than on more genuine market development programs such as MAP and FMD. Now that

direct export subsidy use by competitors such as the EU is limited under the Uruguay Round agreement, we see an opportunity to stop stressing direct export subsidies in U.S. farm sales promotion programs.

USDA operates a number of other programs in the export promotion area which work well, including a small Emerging Markets Program (EMP) originally authorized in the 1990 farm bill, which promotes development and exports through sharing of U.S. agricultural sector expertise, and several international cooperation and development programs, such as the highly regarded Cochran Fellowship Program (CFP). Since 1984, the CFP has provided training in the U.S. for more than 4000 agriculturalist participants from 47 different countries; this training is offered in close association with USDA agencies, and with private U.S. agricultural trade and market development associations. Funding is leveraged by utilizing, where possible, PVOs or other private groups to provide some of the hosting, technical training, and logistical support for the international trainees. USDA has been able to document a number of direct benefits to U.S. farm exports from the CFP (wheat to Slovenia, popcorn to Colombia, soybean products to Bulgaria, and high value products to Poland, China, Indonesia, and Malaysia), plus the creation of new business to business contacts and university linkages.

In the area of agricultural trade promotion, USAID as well as USDA should also seek better ways to partner with state-level government, farm, or industry group organizations in the U.S. The professionalism of state-level agencies is much higher today than it was a generation ago, and in the age of globalization the international focus of these state agencies has been dramatically enlarged. State organizations are frequently more innovative, more flexible and responsive, and sometimes even better funded than federal agencies today. U.S. private sector and PVO organizations are already deeply connected at the state level, and federal institutions should find better ways to partner with states as well.

XI. Conclusion

Friends of U.S. agriculture should be worried about any further diminution of U.S. foreign assistance and trade expansion efforts abroad. Much of the prosperity of U.S. agriculture today is a reflection of such efforts in the past. The prosperity of U.S. agriculture in the future depends heavily upon what we do today.

Three things should be done immediately. First, we should reverse the recent drop in budget resources allocated to international development cooperation activities. A reversal of the downward trend in the 150 account and a restoration

of development cooperation resources within that account should be a bipartisan policy priority in 1997. President Clinton's call for an increase in the 150 account for FY 1998 should receive support from all friends of American agriculture.

Second is a need to reconfigure the institutions and practices we use in delivering development cooperation policies abroad. We should have less of some things (less centralized regulation, less congressional micro-management, and less subordination to short-term diplomatic concerns), alongside more frequent and more effective partnering with private companies, PVOs, and multilateral organizations. As development cooperation resources are being restored, in other words, a larger share of those resources should be redirected toward partnership activities, private sector activities (profit and non-profit), and away from ineffective Cold War era government-to-government budget support programs.

Third is a need to revitalize U.S. trade expansion activities abroad by breaking the partisan deadlock over renewal of fast track negotiating authority.

How can policy leaders, particularly in Congress, be persuaded to support such an agenda for U.S. development cooperation and trade policy reform in 1997? One key to success will lie in creating a broad coalition to promote change. This will mean engaging not just farm and agribusiness organizations; not just U.S. universities and development PVOs. It will also mean reaching beyond those with a specialized knowledge or interest in food and agriculture. Population policy, health policy, and environmental policy leaders should be engaged as well.

But a parallel requirement for success will be a sustained leadership effort from within the U.S. agricultural community itself. American agriculture is not only financially strong and globally engaged. It is also politically sophisticated and well-organized. In its own self interest it should now invest a larger portion of its own political energy in the defense of enlightened, reformed, and revitalized U.S. development cooperation and trade policies abroad.

REFERENCES

- Alexandratos, Nikos, ed. 1995. World Agriculture: Towards 2010, An FAO Study. Published by the Food and Agriculture Organization of the United Nations. New York: John Wiley & Sons.
- Anderson, Kym. 1987. "Does Agricultural Growth in Poor Countries Harm Agricultural-Exporting Rich Countries?" Background paper for address given at the Australian Center for International Agricultural Research, Canberra, May 14.
- Pinstrup-Andersen, Per; Mattias Lundberg, and James L. Garrett, 1995. Foreign Assistance to Agriculture: A Win-Win Proposition. Food Policy Report, International Food Policy Research Institute, Washington, D.C.
- Bathrick, David D. 1996. "Agricultural Development for Global Well Being: Expanded Roles for Multilateral Development Banks," Washington, D.C.: Chemonics International, Inc.
- Easterbrook, Gregg. January 1997. "Forgotten Benefactor of Humanity." Atlantic Monthly.
- Houck, James. 1987. "Foreign Agricultural Assistance: It's Mostly a Good Thing for U.S. Farmers." Choices (First Quarter), p. 19.
- de Janvry, Alain; Elisabeth Sadoulet, and T. Kelly White, 1989. "Foreign Aid's Effect on U.S. Farm Exports: Benefits or Penalties?" Economic Research Service, Foreign Agricultural Economic Report Number 238, U.S. Department of Agriculture.
- Kellogg, Earl, Richard Kodl, and P. Garcia, 1986. "The Effects of Agricultural Growth on Agricultural Imports in Developing Countries." American Journal of Agricultural Economics, Vol. 68, No. 5 (December), pp. 1347-1352.
- Lee, John E., Jr., and Matthew Shane. June 1985. United States Agricultural Interests and Growth in the Developing Economies: the Critical Linkage. Washington, D.C.: ERS, U.S. Department of Agriculture.
- Lipton, Michael, and Robert Paarlberg. 1990. "The Role of the World Bank in Agricultural Development in the 1990s," Washington, D.C.: International Food Policy Research Institute, October.
- Organization for Economic Cooperation and Development (OECD). 1996. "Shaping the 21st Century: The Contribution of Development Cooperation." Paris: OECD.

Ruttan, Vernon H. 1996. U.S. Development Assistance Policy. Baltimore: Johns Hopkins University Press.

Sek, Lenore, and Charles E. Hanrahan, 1996. "How Is U.S. Agriculture Faring Under NAFTA and the WTO? Proceedings of a CRS Seminar." CRS Report for Congress, Congressional Research Service, Library of Congress.

Swaminathan, M.S. 1994. Letter to *Environment* Vol. 36, No. 3 (April 1994), pp. 3-4.

U.S. Agency for International Development, 1986. "Investments in Agriculture." USAID Program and Operations Assessment Report No. 15, Washington, D.C.

World Bank. 1996 "Rural Development: From Vision to Action: Summary." October 23, 1996, Draft.

THE CRUCIAL ROLE OF INTERNATIONAL AGRICULTURAL RESEARCH:

IMPROVING GLOBAL FOOD PRODUCTION,
BENEFITING U.S. AGRICULTURE, ENHANCING
THE ECONOMIES OF DEVELOPING COUNTRIES AND
STIMULATING U.S. TRADE

A Report of the

Working Group on International Agricultural Research
to the
Commission on International Trade, Development and Cooperation

February 1997

National Center for Food and Agricultural Policy
1616 P Street, N. W.
Washington, DC 20036

THE CRUCIAL ROLE OF INTERNATIONAL AGRICULTURAL RESEARCH:

IMPROVING GLOBAL FOOD PRODUCTION, BENEFITING U.S. AGRICULTURE,
ENHANCING THE ECONOMIES OF DEVELOPING COUNTRIES AND
STIMULATING U.S. TRADE

Report of the Working Group on International Agricultural Research

E. T. York
Working Group Chair
University of Florida

Mark Atwood
American Cyanamid

Cheryl Christensen
USDA/ERS

David Bathrick
Chemonics International

Ronnie Coffman
Cornell University

Harvey Hortik
USAID

Raymond Miller
University of Maryland

Elizabeth Owens
ISK Biosciences Corp.

Philip G. Pardey
International Food Policy Research
Institute

Don Plucknett
Agricultural Research & Development
International

L. Whetten Reed
USDA/FAS

Robert Reginato
USDA/ARS

David Sammons
Purdue University

Montague Yudelman
World Wildlife Fund

John G. Stovall
Executive Director of the Commission on International
Trade, Development and Cooperation

National Center for Food and Agricultural Policy

February 1997

PREFACE

This is one of three reports issued by the National Center for Food and Agricultural Policy in connection with the Commission on International Trade, Development and Cooperation. Another report comes from the Working Group on International Trade and Development and another reports the Conclusions and Recommendations of the Commission.

This Working Group on International Agricultural Research was formed to assist the Commission by identifying the key policy issues and offering background information and policy options. The Commission's report draws heavily on this report and adopts its major recommendations.

The idea for this Commission grew out of the debate that led up to the 1996 Farm Bill. A number of participants lamented that the debate centered around a rather narrow set of policy issues, ignoring some that were extremely critical to the long-term economic health of the U.S. food and agricultural sector. Those neglected issues related to the stake U.S. agriculture has in this country's international affairs, and particularly our economic interests in developing countries and emerging market economies.

This country's leadership and support has been important in international agricultural research. The U.S. was instrumental in forming the Consultative Group on International Agricultural Research, which now oversees a network of 16 agricultural research centers. The direct benefits of these centers to U.S. agriculture has not been fully appreciated nor has the potential from collaboration with them been realized. The Working Group on International Agricultural Research has offered several suggestions for realizing that potential.

On behalf of the National Center for Food and Agricultural Policy and the Commission, I wish to thank the members and alternates who served on this working group. Special thanks are due Dr. E. T. York, chair of the working group, for his leadership and to Dr. Don Plucknett for producing a draft of this report.

Recognition and thanks are also due those whose financial contributions made this all possible. They include: The Economic Research Service; the Foreign Agricultural Service and the Agricultural Research Service; USDA; USAID; Cargill, Inc.; DowElanco; Farmland Industries; Pioneer Hi-Bred International; and Harvest States Cooperatives. They deserve our thanks but bear no responsibility for the content of the three reports and do not necessarily agree with their conclusions and recommendations.

John G. Stovall
Senior Fellow
National Center for Food and Agricultural Policy

Foreword

This report was prepared by the Working Group on International Agricultural Research, and its efforts were supported and expedited by the National Center for Food and Agricultural Policy, Washington, DC.

This report is prepared as a part of the effort of the Commission on International Trade, Development and Cooperation for use in the preparation of its report which will be presented in a national meeting scheduled to be held in Washington, DC, on February 25, 1997.

The Research Working Group is greatly appreciative of the excellent support and direction it has received from Dr. John Stovall of the Center for Food and Agricultural Policy and expresses to him its deep gratitude for his efforts. We are also indebted to Dr. Don Plucknett who was primarily responsible for developing a draft of the Working Group's report on International Agricultural Research. Excellent inputs to the report were made by all members of the Working Group.

Members of the Research Working Group are as follows:

Dr. Mark Atwood, American Cyanamide
Mr. David Bathrick, Chemonics International
Dr. Cheryl Christensen, USDA
Dr. Ronnie Coffman, Cornell University
Dr. Harvey Hortik, USAID
Dr. Raymond Miller, University of Maryland
Dr. Elizabeth Owens, ISK Biosciences Corporation
Dr. Phillip G. Pardey, IFPRI
Dr. Donald L. Plucknett, Agricultural Research and Development International
Dr. L. Whetten Reed, USDA
Dr. Robert Reginato, USDA
Dr. David Sammons, Purdue University
Mr. Montague Yudelman, World Wildlife Fund
Dr. E.T. York, Jr., University of Florida, *Research Working Group Chair*

Dr. Rick Bennett, USDA (alternate for Dr. Reginato)
Dr. Keith Fuglie, USDA (alternate for Dr. Christensen)

Table of Contents

Foreword	1
Summary	3
The Global Challenge and Need	6
The Challenge	6
Globalization	6
The Global Food Situation	7
Response to Increasing Global Needs—And Future Prospects	8
Significant Developing World Progress	8
Future Prospects for Improving Food Production	8
The Vital Role of Agricultural Research in Meeting Global Challenges	13
Scientific Revolution and Agricultural Transformation	14
The Agricultural Research Continuum	18
National Agricultural Research Systems (NARS)	20
Expanding the Agricultural Research Agenda	21
Agricultural Research and Economic Cooperation	21
A Research/Agricultural Development/Economic Development/ Trade Continuum	23
Public Support for Agricultural Research	23
Partnerships	24
An Emerging Strong Consensus Concerning the Need for Major Commitments to International Agricultural Research	25
Agricultural Research as an Investment	29
Benefits to the United States from International Agricultural Research	30
Returns from Investments through Greater Trade	30
Direct Benefits to U.S. Agriculture	31
The United States Stake in a Greater Global Agricultural Research System	33
Present U.S. National Capacity and Institutions	33
Making the U.S. Agricultural Research System More Effective in a Global Research System	34
Our Potential Roles and Benefits	35
Global Research for Global Trade: Benefits, Potential Impacts	36
Recommendations	38
References	41

The Crucial Role of International Agricultural Research: Improving Global Food Production, Benefiting U.S. Agriculture, Enhancing the Economies of Developing Countries and Stimulating U.S. Trade

A Report of the
Working Group on International Agricultural Research
Commission on International Trade, Development and Cooperation

Summary

The world faces tremendous challenges in the next quarter century, including feeding and improving the diets of a burgeoning world population, increasing employment for the poor, protecting and enhancing natural resources, and ensuring global peace and security – as well as one increasingly committed to global trade involving greater national and regional competitiveness. Most of these challenges focus upon the poorest countries in the developing world.

Since agriculture is the foundation of the economies of most developing countries, there is widespread evidence and agreement that the best way to address these challenges is through effective programs of international agricultural research which can provide the means to increase food production, protect natural resources, enhance economic growth and reduce poverty. Such research is essential to help transform the agricultural sectors of developing world countries, which, incidentally, also represent the largest market for U.S. agricultural commodities, goods and services. Such research also contributes to improving U.S. agricultural productivity and competitiveness, thereby enhancing our own economies as well as those of developing countries.

It is in the national interest of the United States to participate fully and take leadership in a broadened global agricultural research system that supports economic cooperation, growth, and global trade. This proposal represents a considerable shift in emphasis for the United States, from a present foreign aid approach to support global agricultural research, to a new paradigm of international partnerships in agricultural research conducted within a framework of economic cooperation. To make the new paradigm work, changed thinking and different modes of operation will be required in many parts of the Federal government, as well as in universities and private firms, especially since the U.S. domestic research system is somewhat compartmentalized and inward-looking. Only a strong national commitment will bring needed changes, but the result would be the emergence of a more robust and agile research system, to handle both

domestic and international problems that hamper U.S. agriculture today and tomorrow as well as helping to expand trade.

Our Working Group makes one overarching recommendation:

"As a matter of high national interest, that the United States support and participate actively in international agricultural research as part of a new paradigm of global economic cooperation based on trade rather than foreign aid."

Given the contributions of international agricultural research to the economies of developing nations, as well as to the U.S., and the deterioration in support of U.S. international agricultural research over the last decade, there should be a major increase in U.S. financial support for such research.

Such financial support should come from two sources: (1) traditional USDA appropriations, and (2) the International Affairs budget (the 150 account) of the U.S. Congress. The Commission on International Development, Trade and Cooperation is proposing a 3 percent increase in real terms annually for five years in the total International Affairs budget, suggesting that at least half of this increase should go to a revitalized economic growth package which includes international agricultural research as a major, if not primary, component.

There must be active U.S. participation and leadership, involving federal, state and private entities, to conduct global agricultural research to deal with problems and opportunities, both current and future. This is a goal which cannot be achieved any other way — and, indeed, may depend on unprecedented research efforts and partnerships.

Planning, advocacy, and administration of federal support for international agricultural research should be a national responsibility to ensure broad involvement of agencies and departments whose efforts might be enhanced by international agricultural research, including USAID, USDA, EPA, Interior, Treasury, Commerce, U.S. Trade Representatives, National Science Foundation, and others.

Primary leadership for such an effort should be given, perhaps through a Presidential executive order and/or legislation, to a reformed USAID, which should be an independent agency reporting directly to the President and responsible primarily for international economic development. The name of this agency should be changed to reflect the new emphasis of the agency on cooperation in development rather than "aid." The *Agency for Development Cooperation* or *International Economic Cooperation Agency* are possible new names.

The agency would have humanitarian objectives and goals such as a response to famine, natural disasters and other emergencies around the world. However, the justification for its programs of international agricultural research could readily be based on how such programs directly benefit the U.S. through enhanced trade and improved domestic economies rather than on an altruistically-based aid rationale. It should be recognized, as well, that these programs benefit the U.S. by contributing to increased political stability in developing countries.

Currently there are a number of independent initiatives strongly advocating substantial increases in U.S. support for international agricultural research. These include the following: The Collaborative Research Support Programs (CRSPs), the Global Research on Environmental and Agricultural Nexus (GREAN) initiative, the program for Globalizing Agricultural Science and Education Programs for America (GASEPA), the efforts of the U.S.-based Trustees of the International Agricultural Research Centers, the International Food Policy Research Institute, the U.S. Department of Agriculture and others. Implementation of the recommendations of the Commission on International Trade, Development and Cooperation, along with its Working Group on International Agricultural Research, would provide the means to achieve the objectives of these various independent initiatives. Accordingly, we urge all of these groups to provide active, cohesive support to implement the proposals of the Commission and its Research Working Group.

The Global Challenge and Need

"We must engage the international community in the demanding and unremitting task of meeting the challenge of feeding a world where a billion people go hungry today and to whose population will be added another billion over the next decade."

Ismail Serageldin, Chairman of the CGIAR, 1996.

"...poverty reduction, widely-shared growth, food security, and sustainable natural resources management, cannot be met unless rural development in general, and a thriving agricultural economy in particular, are nurtured and improved."

Rural Development: From Vision to Action. The World Bank, 1996.

The Challenge

The world faces tremendous challenges in the next quarter century, including feeding and improving the diets of a burgeoning world population, increasing employment for the poor, protecting and enhancing natural resources, and ensuring global peace and security—as well as one increasingly committed to global trade involving greater national and regional competitiveness. Leading experts from many backgrounds and countries have conferred on how best to meet the challenges and opportunities and to improve peoples' lives; there is essential agreement on the imperative to increase food production and economic opportunity and to increase access to food and improve peoples' lives by reducing poverty.

There is also agreement that the most powerful way to achieve increased agricultural production, protect natural resources, achieve economic growth and reduce poverty in poor countries is the modernization of the agriculture sector brought about by effective global agricultural research and supporting services. These basic services are essential to help transform the agricultural sectors of the world's poorest countries, which incidentally also represent the largest potential markets for U.S. commodities, goods and services. Such programs therefore not only improve U.S. productivity and competitiveness, but also are essential for improving our own levels of economic growth.

Globalization

"...worldwide globalization issues have been in the forefront of every discussion. Globalization means moving away from well-known, traditional structures, organizational forms, and hierarchies and entering the unknown; it means change."

Christian Bonte-Friedheim and Kathleen Sheridan, The Globalization of Science: The Place of Agricultural Research. ISNAR, The Hague. 1996.

Many studies support the propositions presented above, most of them concluding that: *business as usual will just not do as globalization becomes a way of daily economic life*. What is needed are changed institutions and modes of operation in a rapidly-changing, free-trading world struggling to cope with rapid population growth and mounting pressures on natural resources, while at the same time trying to raise incomes, improve nutrition and provide individual opportunities. In an increasingly competitive world, hundreds of millions of poorly equipped farmers with limited supporting services will be forced either to become competitive or leave their farms. Unless handled well, major social and political disruptions will increasingly occur which could upset global political and economic well-being. Such circumstances lead us to conclude that economic cooperation, not foreign aid, is needed as nations work together to overcome problems that limit agriculture and its improvement. Unless such problems are overcome, overall economic growth and security will also be limited.

The Global Food Situation

It is obvious that global food production must increase greatly to meet rapidly growing demands. Food needs are estimated to more than double by 2025, with further increases of 50 percent needed by 2050. The need for food will be influenced primarily by population growth. However, demand for food will be affected also by the ability of consumers to purchase food and by changing dietary patterns and urbanization.

It is also obvious that accelerated economic growth is needed in most countries, and for most developing countries, such growth will only occur if agriculture and related industries are improved. Today, with more favorable economic policies and trade liberalization, agriculture becomes even more important as a primary sector for economic growth, and agricultural products, including commodities, inputs, machinery and new technologies become centerpieces in international trade.

Although world population growth rates have been declining steadily since about 1970, about 90-100 million people will be added annually for the next several years; at this rate a new India would be added every decade. Some 95 percent of the growth will occur in developing regions where food deficits are already severe, and where alternative employment opportunities and economic growth are limited.

World Bank studies suggest that global population should grow from some 5.7 billion in 1996 to 8 billion in 2025 and 10 billion in 2050. More conservative estimates suggest a maximum population of about 8.5 billion may be reached around 2035. Regardless of whether one accepts a higher or lower projection, numbers of people and the related demand for food will increase substantially over the next several decades.

Response to Increasing Global Needs – And Future Prospects

Significant Developing World Progress

As a result of new technology from agricultural research, coupled with policies that encouraged agriculture and agricultural development, remarkable gains have been made in food production in some developing countries, particularly in India, China, parts of South and Southeast Asia and Latin America. India has increased its wheat production more than five-fold since the late 1960s, with almost all of the gains being made through higher yields on about the same area of cultivated land. China has achieved similar successes in meeting its food needs by applying science to agricultural production; using improved seeds, irrigation and fertilizer; and diversifying its agriculture in response to export market opportunities. As a result of these developments, China has transformed its economic and support structures that serve agriculture and the rural economies.

While improved technologies and policies are essential to achieve successes such as those listed in the preceding paragraph, appropriate institutions and services are also needed to help support agricultural development and transformation. With the exception of the gains made in China, most of the success stories listed above can be related to considerable U.S. investments in improving agricultural institutions and agricultural research capacity that were made more than a decade ago, some of them more than two decades ago.

Future Prospects for Improving Food Production

There is considerable debate about the outlook for agricultural productivity in the future. Some believe that crop yields have reached a plateau or that they are beginning to decline. Others point to continuing yield improvements in many countries throughout the world and urge a continuing search for scientific advances and new technology to boost yields even further.

Yield levels in most countries are well below theoretical potential yields, which for high potential lands have been calculated as high as an annual yield of 25,000 kg/ha grain yield equivalent. Also, theoretical yields have been calculated for the continents: South America leads in highest potential yields (18 metric tons/ha), followed by Africa (14.2 mt/ha), Asia (13.1 mt/ha), North and Central America (11.2 mt/ha), Europe (10.4 mt/ha) and Australia (10.4 mt/ha).

Throughout history, yearly crop yield gains have mostly been small and marginal, about 2-15 kg/ha/yr (1 percent or less). The question for agriculturists has always been, how to attain higher yields? Scientific agriculture has proved to be the answer, especially since World War II when most yield takeoffs occurred, beginning after the

war in industrialized countries and since the late 1960s in some developing countries. Yield takeoff can be defined as a point where, after years of very slow or stagnant yield gains, usually well under one percent per year, there is a clear transitional point where yields move well beyond rates of gain of one percent (or less) to two percent or more. These higher rates signal a shift toward modern agriculture, and, in most cases, these rates of gain can be sustained over the years.

Both the United Kingdom and the United States reached yield takeoff in wheat just after World War II when yields began to climb with the advent of new varieties and improved practices. Yield takeoff in corn in the United States began in the 1930s with the advent of hybrid corn and has averaged about 125 kg/ha/yr since. Average corn yields in 1900 were about 25 bu/ac (1.4 mt/ha), while in 1994 the average yield was 153 bu/ac (8.6 mt/ha).

What does yield analysis tell us about present trends? The picture in wheat is very interesting. China achieved yield takeoff in wheat about 1960 and over 30 years has had an average gain of 91 kg/ha. India achieved takeoff in 1967, with an average 54 kg/ha/yr gain since, enabling it to more than triple wheat production while reducing the amount of land sown to wheat. Ireland has achieved yield growth of 285 kg/ha/yr over the past decade and now enjoys yields of more than 8 mt/ha. Parenthetically, a yield improvement of 285 kg/ha/yr would provide a new (metric) ton of wheat every 3.5 years. Egypt achieved yield takeoff in wheat in 1969, and has had two distinct periods of yield growth; 1969-1980 gains averaged 64 kg/ha/yr, and 1980-1990 gains averaged 200 kg/ha/yr, giving an averaged 128 kg/ha/yr since yield takeoff, a figure that compares with corn yield gains in the U.S. since takeoff in the late 1930s.

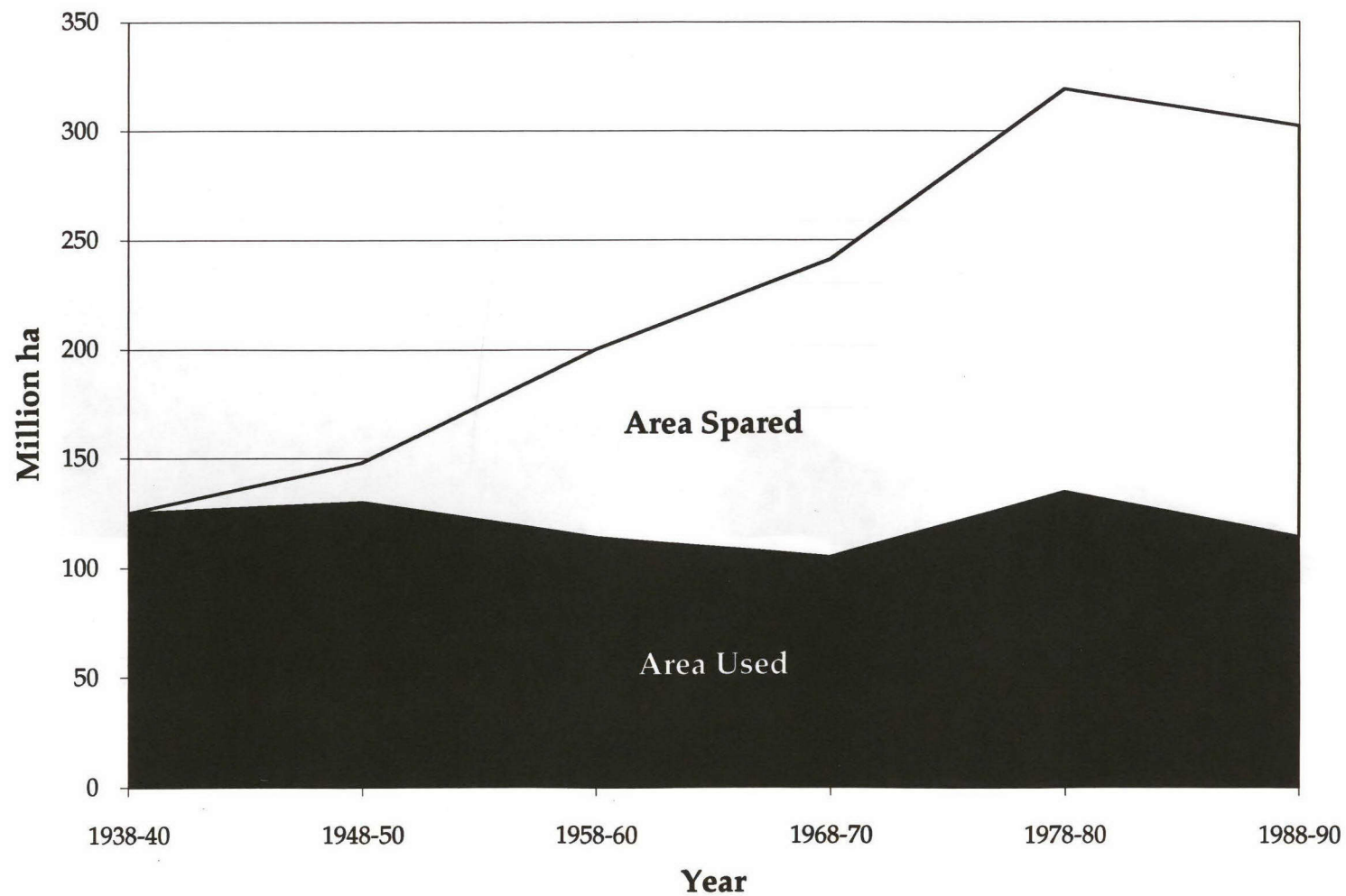
Rice presents another example. Once thought to be a dead-end crop for many tropical countries because of intractably low yields, rice has experienced tremendous yield growth since the late 1960s. New semi-dwarf rice varieties developed at IRRI and CIAT have dramatized the high yield potential of rice in developing countries, particularly in Asia, Latin America and Egypt. Rates of gain after takeoff have been: China--125 kg/ha/yr; Philippines--takeoff in 1968, averaged 68 kg/ha/yr for more than 20 years during which yields more than doubled; Indonesia--takeoff in 1968, averaged more than 110 kg/ha/yr as yields more than doubled; Colombia--takeoff in late 1960s, yields jumped from 2 mt/ha to 5 mt/ha in 23 years, at a rate of 95 kg/ha/yr.

In corn, the world average gain during the 1980s was about 30 kg/ha/yr. Twenty-four countries, 15 of them developing countries, had yield gains above the world average. Highest gains were achieved by Chile, with an astounding rate of 300 kg/ha/yr over the decade of the '80s, using U.S. hybrids as the genetic base. Corn yields in Chile now average over 8 mt/ha (more than 140 bu/ac), more than double the yields of 1979-81. Takeoff in corn in Europe apparently occurred about 1963, and yields more than doubled over the next 20 years, at a rate of 160 kg/ha/yr.

More examples could be given, but space does not allow. The following are some conclusions that can be drawn from yield studies:

- Most countries are well below their attainable, practical yields.
- Average annual rates of yield gains for most countries indicate we are still well below the maximum yield of most crops. The high rates of gain being achieved by some countries indicate there is still room yet for further yield improvement, but this will not be easy. Excellence in agriculture requires much hard work, knowledge, and keen attention to detail - not only in the laboratory and research stations of both public and private parties, but also on millions of farms.
- Yield performance in terms of annual gains as well as average yields attained does not indicate significant environmental degradation that might affect yields. The general trend for most crops and countries is sustained growth, often at high and even accelerating rates of gain. A significant environmental benefit of improved productivity is that less land is required to obtain the necessary productivity. Figure 1 shows the amount of land spared from production for all crops in the U.S. from 1961 to 1990 as a result of higher yields. Figure 2 provides comparable data for India as a result of improvements in productivity of wheat from 1961 to 1991. It should be recognized that the figures in Figures 1 and 2 of "land spared" are very conservative since the land "spared" for agricultural production is usually less productive than the land currently responsible for the higher yield.
- High rates of yield gain today indicate that research begun in the 1960s, 1970s, and 1980s is paying off in greater productivity. Continued investments in research will allow continued gains in productivity.
- Yield takeoff is not restricted to developed countries; indeed, it appears that almost any country that wishes to improve its yields can do so, provided it imports or develops the necessary technology and develops a more favorable policy environment for agriculture;
- At least in the cereals and most food crops, yields do not appear to be leveling off or declining; where yield gains are falling or even negative, very often civil strife, war, or droughts have been involved.
- When developing countries achieve yield takeoff, their rates of yield gain often exceed those achieved earlier in developed countries; this can be attributed at least in part to the increased knowledge base and improved plant materials and techniques developed through international research.
- Continued support for agricultural research, both at national and international levels, will pay big dividends in providing a strong base for continuing productivity gains into the foreseeable future.

Figure 1. The Land U.S. Farmers Saved by Raising Yields of All Crops, 1938 to 1988-90

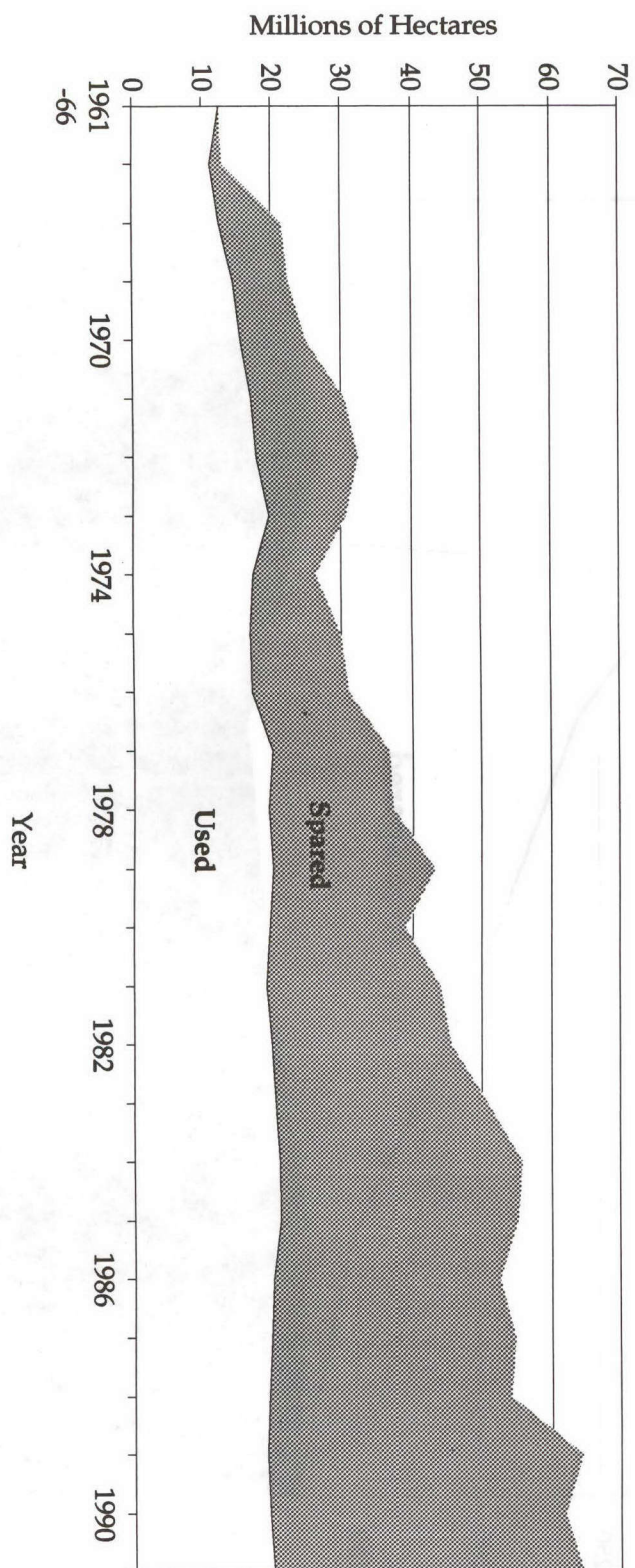


1938-40 Production: 252 million tons

1988-90 Production: 596 million tons

Source: Unknown

Figure 2. The Land Indian Farmers Saved as a Result of Increased Improvements in the Yield of Wheat



In addition to yield studies which indicate potentials to achieve desired production goals, it should be recognized that there are other means to enhance food production and availability. For example, research to improve resistance to both biotic and abiotic stress is a means to enhance food production. Reducing total cost of production by reducing chemical inputs through genetic research has both production and environmental implications. Further changes in national policies in developing countries may also provide a major stimulus to agricultural production. Moreover, research to reduce significant levels of post harvest losses of crops can result in significant increases in the amount of usable agricultural production.

The Vital Role of Agricultural Research in Meeting Global Challenges

We begin our consideration of the vital role of agricultural research with three propositions and six basic assumptions – as follows:

Proposition 1. The aim of international agricultural research should be the transformation of agriculture:

- to attain productive, profitable enterprises for farmers,
- to not only enhance agricultural productions, but also to respond to changing market requirements and reduce significant post-harvest losses,
- to protect and enhance the natural resource base and address agriculturally related problems of environmental degradation,
- to address and resolve policy and social problems which may impede agricultural development,
- to deliver healthy, quality products to markets,
- to generate research products, technologies, and information systems,
- to attain lower food prices for consumers,
- to generate increased on-farm and related off-farm employment and expand economic growth in the poorer, generally agrarian-based economies; and
- to achieve an increased contribution of agriculture and related industries to global trade and overall economic development.

Proposition 2. Based on a goal of agricultural transformation, there is a critical need for strengthened United States involvement in a dynamic global agricultural research system:

- to bring about agricultural transformation in poorer countries by boosting agricultural production and reducing poverty, thereby providing improved global security and new trading partners and markets for U.S. products, and
- to continue agricultural transformation in the U.S. itself by ensuring a more robust and agile domestic agricultural technology generation capacity, both public and private, to deal with problems facing U.S. agriculture in a trade-driven, free market global economy.

Proposition 3. A new paradigm for global agricultural research must be developed with creative, forward-thinking U.S. leadership that will:

- create a collaborative system for agricultural research to suit the goal of international economic cooperation, in which trade and free markets will be guiding principles,
- build on past experiences in international agricultural research such as the work of the Consultative Group on International Agricultural Research (CGIAR) and its partners—as well as by others,
- through strategic partnerships, involve more fully the leadership and scientific prowess of United States public and private research with scientists from industrialized countries and developing countries,
- mobilize appropriate support and strategies for poor countries to participate in the rapidly changing, market-led development agenda of global trade,
- link institutional scientific capability and national self interest with global productivity, trade, economic development and sustainability needs and, thereby,
- significantly improve the well being of billions of people.

Six basic assumptions underlie the propositions stated above, as well as for planning for future agricultural improvement to meet national and global needs:

- continued intensification of agriculture is essential if we are to meet the needs of the growing world population,
- environmental concerns which must receive appropriate research attention can be partly addressed by enhancing and sustaining productivity on the best lands, thereby reducing mounting pressures on marginal lands,
- problems of public policy which impede agricultural growth in many countries must be addressed and resolved in order to achieve needed agricultural development,
- research to find new pathways for productivity gains is essential, as well as research to reduce large post-harvest losses which often occur,
- global trade will expand and, within that expansion, agricultural trade between the U.S. and developing countries will expand, and
- new strategies and approaches are needed to generate relevant technologies and develop knowledge systems that are responsive to changing comparative advantages and improved competitiveness for both the United States and the poorer countries.

Scientific Revolution and Agricultural Transformation

The previous section illustrates the power of science to help transform agriculture, especially in industrialized countries, and it should be clear that what is wanted in all countries is agricultural transformation. However, as recently as 60 years ago, few persons held even a dim vision of what the potential for agricultural improvement might be. Still, there was a glimmer of understanding, for in 1930, the eminent economist, John Maynard Keynes, wrote:

"From the sixteenth century, with a cumulative crescendo after the eighteenth, the great age of science and the technical inventions began, which since the beginning of the nineteenth century has been in full flood--coals, steam, rubber, cotton, the chemical industries, automatic machinery and the methods of mass production, wireless, printing, Newton, Darwin, and Einstein, and thousands of other things and men too famous and familiar to catalogue...."

"There is evidence that the revolutionary technical changes, which have so far chiefly affected industry, may soon be attacking agriculture. We may be on the eve of improvements in the efficiency of food production as great as those which have already taken place in mining, manufacture, and transport. In quite a few years--in our own lifetimes I mean -- we may be able to perform all operations of agriculture, mining and manufacture with a quarter of the human effort to which we have been accustomed." (Keynes, 1931)

Keynes ended his article as follows:

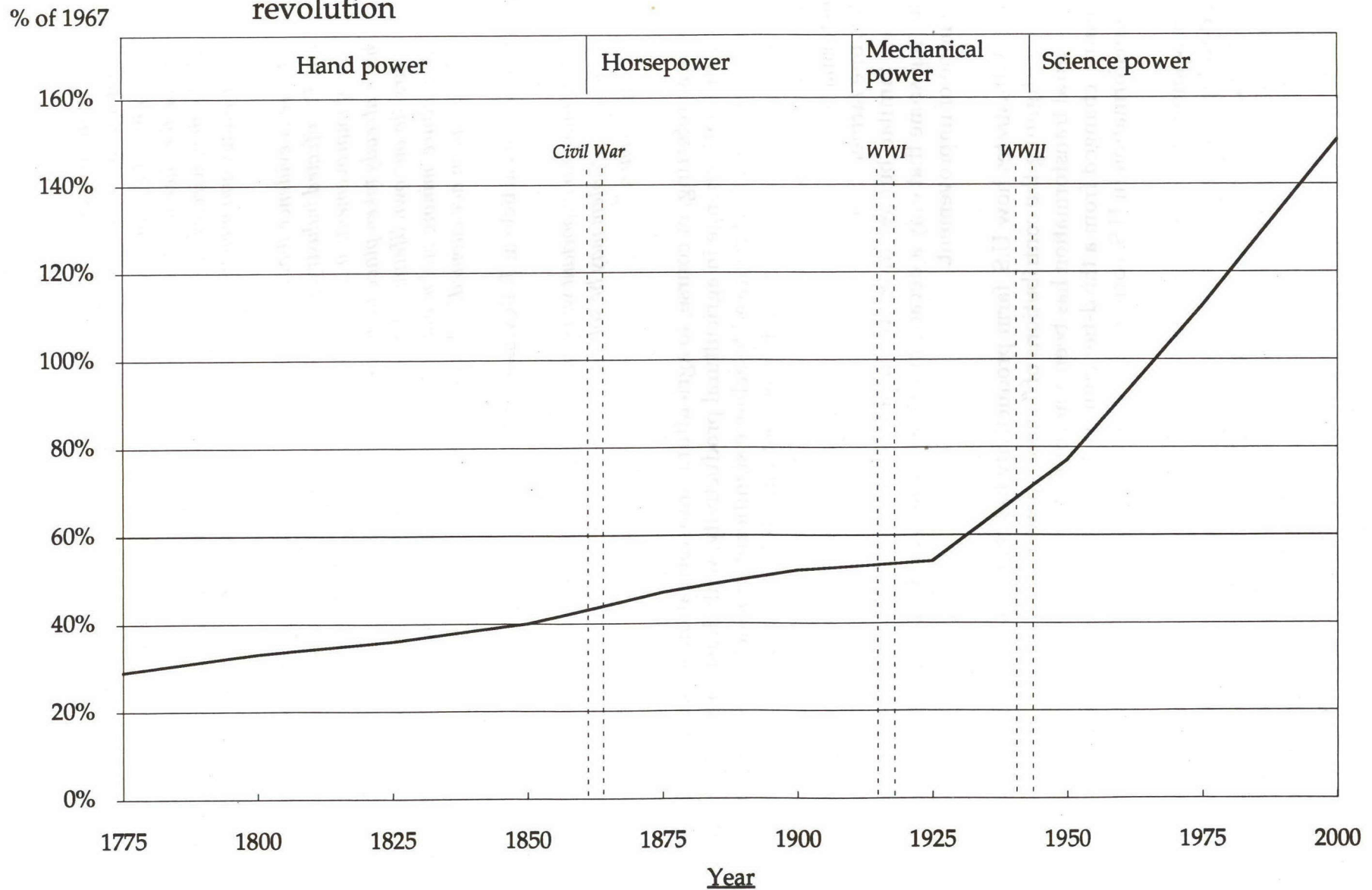
"Assuming no important wars and no important increase in population, the economic problem may be solved, or be at least within sight of solution, within a hundred years."

Keynes was referring, of course, to agricultural transformation so profound that he foresaw dramatic change in agricultural productivity, with drastic reductions in the amount of human effort required to achieve significant production. We know he was right in general terms, but even his prescient gifts did not allow him to understand just how efficient agricultural production would become, nor how powerful agricultural transformation could be in driving and transforming economies. Today, in the United States, one farmer feeds 77 persons, at a cost of just over 7 percent of total family income. Similar, but less dramatic, improvements are happening in other countries, including some that only a decade or two ago were considered less developed and with little hope of improvement.

Figure 3 illustrates how U.S. farm productivity has changed in various periods since 1775, highlighting the contributions of "science power" since World War II. Agricultural transformation has been a major factor in the United States which, within a century, changed from a third-tier country to superpower status. Figure 4 illustrates the transformation in U.S. corn productivity from the Civil War to the present.

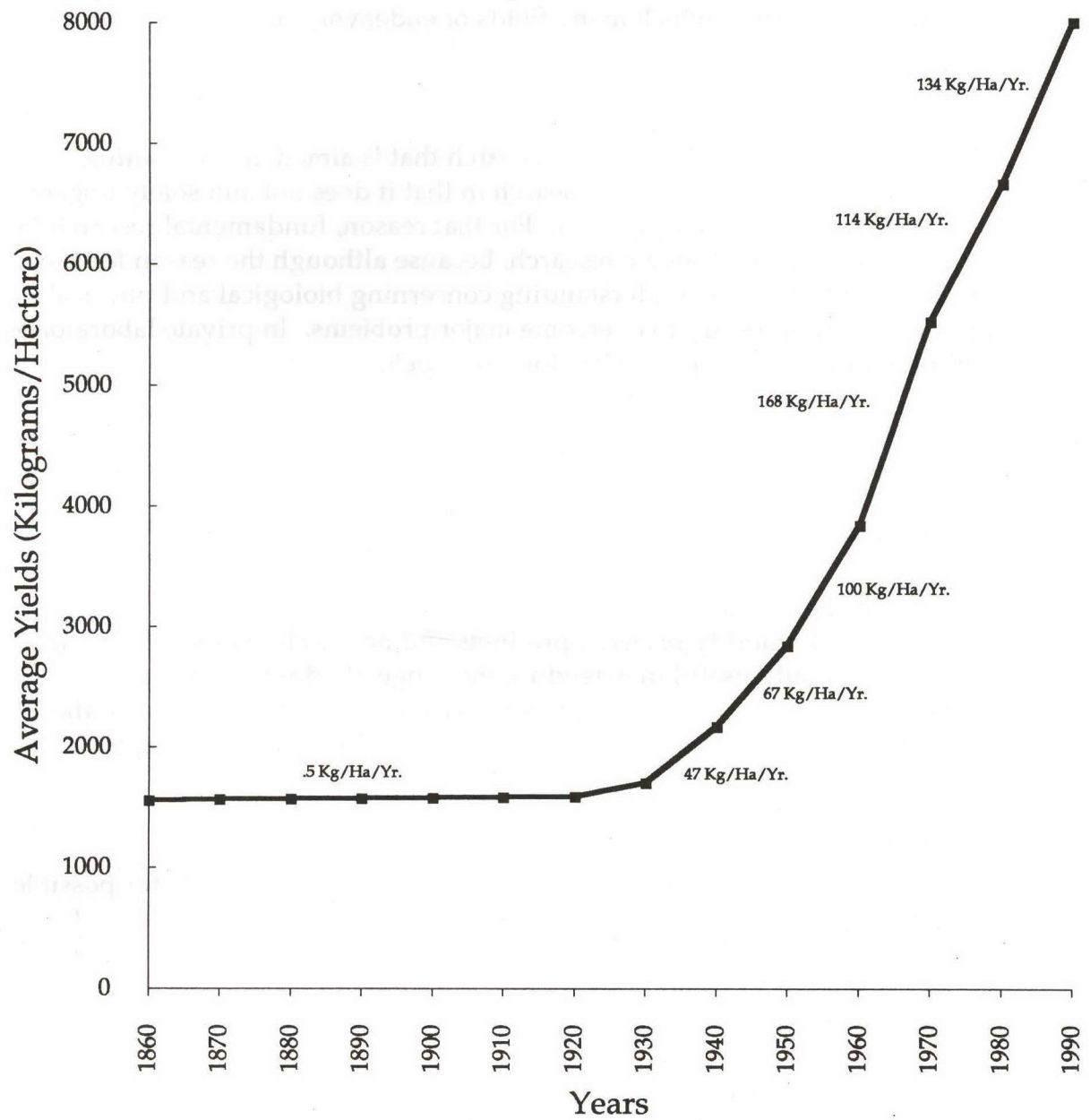
We now know that science-driven agricultural transformation can occur in countries that develop effective agricultural research capacities. This success was achieved first in industrialized countries, but in the late 1960s and early 1970s the dramatic success of the Green Revolution in wheat and rice in Asia and Latin America brought the realization that agricultural transformation could also occur in developing countries and that agricultural research was a wise and high-return investment.

Figure 3. US farm productivity rose dramatically because of scientific revolution



Source: After the Office of Technology Assessment, 1981.

Figure 4. U.S. Maize Yields, 1860-1990



The Agricultural Research Continuum

Research can be carried out in several levels or phases, recognizing, however, that research is really a continuum of activity, from the search for fundamental knowledge, through applied research to solve problems, the consequent development and testing of technology, and its eventual use (Figure 5).

- **Basic Research (Level V).**

Fundamental research aimed at understanding basic biological and physical laws and processes while advancing the state of knowledge. Basic research produces a feedstock of new ideas and concepts from which many fields of endeavor, including agriculture, draw and derive benefit.

- **Strategic Research (Level IV).**

Strategic research is essentially fundamental research that is aimed at overcoming specific problems, and differs from basic research in that it does not aim solely to gain knowledge, but aims at a particular problem. For that reason, fundamental research in agriculture is best classified as strategic research, because although the reason for the research is problem solution, new understanding concerning biological and physical processes and principles necessary to overcome major problems. In private laboratories Level IV would be considered as **pre-technology research**.

- **Applied Research (Level III).**

Applied research aims to find a use for knowledge and ideas coming from strategic or basic research and to apply them to improve agriculture. Level III probably can be considered as **technology invention**.

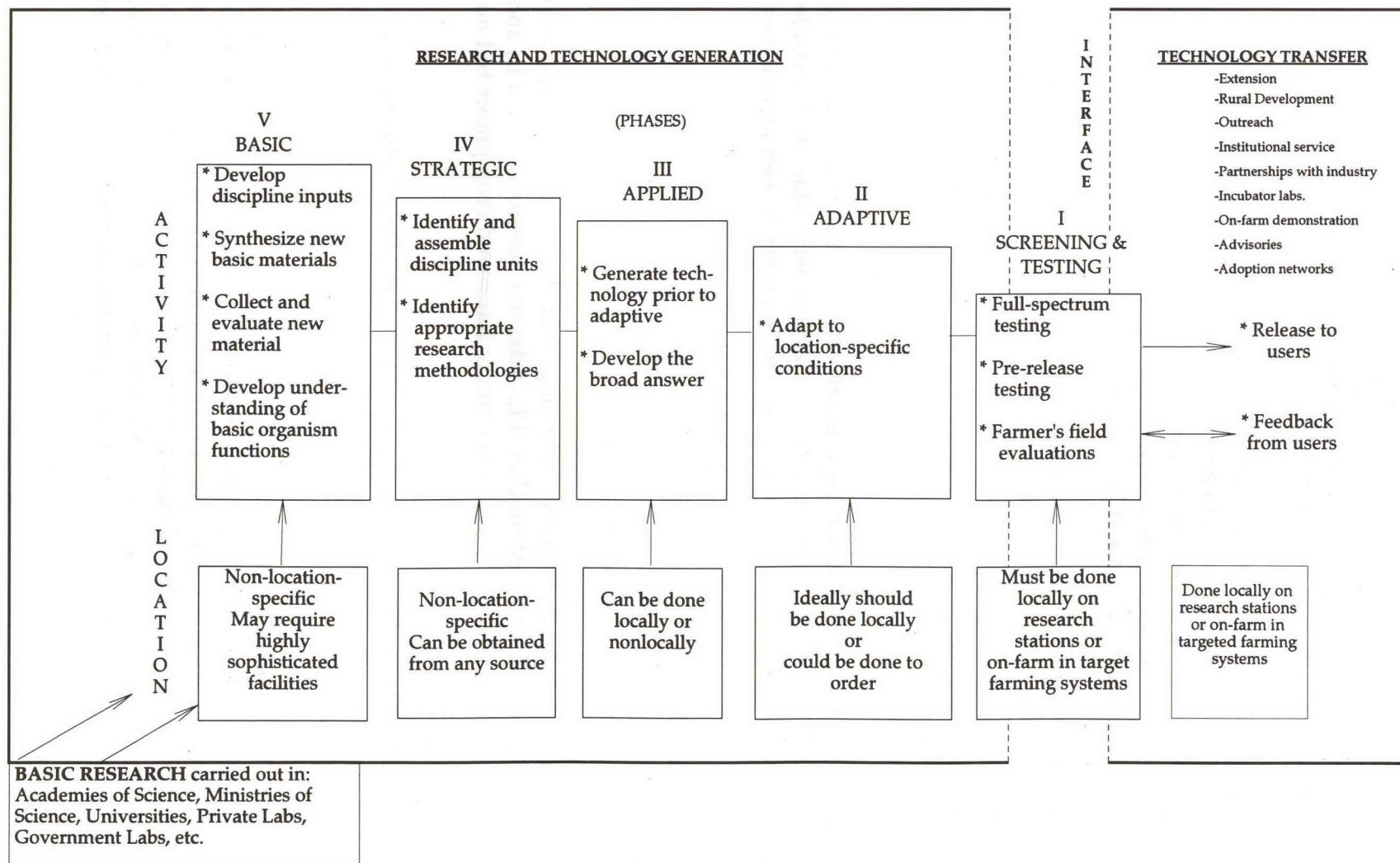
- **Adaptive Research (Level II).**

Adaptive research aims to modify research products and new technologies for use in production, and is especially useful in extending the range of adoption of new technologies by fine-tuning products or management practices required to make the technology work in specific locations. Level II can be considered as **technology production and early testing**.

- **Screening and Testing (Level I).**

Screening and Testing aims to test new technologies under local conditions for possible direct use. Good research techniques and analytical skills are required to ensure its validity, but usually Level I does not require sophisticated equipment or laboratories. Level I could be considered as **technology diffusion/extension**.

Figure 5. Agricultural Research and Technology Generation and Diffusion Continuum: Phases of Agricultural Research



Source: Adapted from ISNAR (1981).

National Agricultural Research Systems (NARS)

Major partners in the global agricultural research system are the NARS, both in developing and developed countries.

A National Agricultural Research System can be defined as: All elements of a country's agricultural research establishment and capability, including; institutions run by government ministries, universities, specialized commodity or problem-oriented institutes, and private sector research institutions, including non-governmental research organizations supported by voluntary development or philanthropic bodies.

There have been attempts to categorize NARSs according to their capacity to carry out research and the resulting role(s) they might play within their borders and in partnerships. In 1985 the Agency for International Development classed countries as technology-producing and technology-adapting. Plucknett (1996) fashioned a related typology, using plant breeding capability as a proxy for relative state of development of scientific capacity:

- **Category I.** Technology-importing countries that do essentially no experimentation and whose only capacity may be to serve as a generalist contact with outside organizations. In Category I countries, only rudimentary Screening and Testing (Level I) is usually possible.
- **Category II.** Technology-importing NARSs that do limited experimentation restricted mostly to Adaptive Research (Level II) and Screening and Testing (Level I), and with no plant breeding capability.
- **Category III.** NARSs that import technology but also produce technology by conducting Screening and Testing (Level I), Adaptive Research (Level II) and some Applied Research (Level III). Some selection of improved crop plants but no plant breeding.
- **Category IV.** Technology-producing NARSs that are linked effectively into the global technology generation system, that have plant breeding capability, and can carry out research in Levels I, II, and III with relative ease.
- **Category V.** Technology-producing NARSs that enjoy peer or near-peer relationships with IARCs and advanced research organizations in selected areas of research, and can carry out Strategic Research (Level IV) in selected areas when necessary. Effective plant breeding capability, including the ability to handle and utilize basic germplasm and advanced techniques. Category V NARSs can be full partners in helping to solve certain pressing global or continental research problems.

Expanding the Agricultural Research Agenda

Increasing environmental concerns, along with a greater awareness of the need to protect and conserve our natural resource base for future generations, is becoming a vital part of our agricultural research agenda. Consequently, in addition to our emphasis on enhancing productivity, agricultural research institutions must realize the need for research on management and conservation of natural resources. Furthermore, policy, social and cultural perspectives are being incorporated into agricultural research programs. Moreover, there is a greater realization of the critical role of women in agriculture. Therefore, a new paradigm for agricultural research is developing in which these environmental and social issues are receiving needed attention as research agendas are developed.

Agricultural Research and Economic Cooperation

The world economic system has changed dramatically. In the midst of such change agriculture is becoming recognized again as an engine of economic growth, particularly in poor countries. The goal is agricultural transformation which involves dynamic agricultural change that moves a country from traditional agriculture with low yields, generally poor performance, and little hope for improvement toward modern agriculture that exploits comparative advantages to achieve higher yields, greater farm profitability, more off-farm employment, greater economic growth in rural areas, and improvement of rural life and communities.

A few models have been developed -- including needed institutional capacity -- to respond effectively to the new global competitive trade agenda. Examples are Chile and Indonesia where U.S. institutions have helped to generate the capacities, institutions and technologies to achieve remarkable agricultural transformation. These countries and other fast-growing economies started their dynamic economic growth rates by first expanding their agricultural sector at growth rates of 5-6 percent per year. Such dramatic growth was accomplished by focusing on policies and targeted programs, and agricultural technology development was always a key element of effective national efforts.

In the future, as national comparative advantage becomes the new driving emphasis, agriculture will be even more important, both domestically and abroad. International agreements -- GATT, NAFTA and its look-alikes-- and the development of other trade-related regional or international bodies are causing changes in markets and patterns of international trade. For example, agricultural commodities -- especially cereals-- have been traded internationally for years, but increasingly, high-value products such as fruits and vegetables are traded between continents, in both fresh and value-added form. To support such change there is need for a research system that works beyond national borders and that helps link public and private science to agricultural innovation, development and markets.

We are concerned, however, that at the same time new developments in trade are stimulating interest in a wider global agricultural research effort, funding for such research has declined. For example, the CGIAR--despite high praise for its work that sparked agricultural revolution in Asia and Latin America with dramatic increases in food production and reduced food costs--by 1994 had experienced a significant downturn in funding. Donor "aid fatigue" was cited as one reason for the decline, but even traditional supporters of agricultural research, including USDA and USAID, were reducing their support for agriculture and agricultural research. For example, since 1985 USAID has reduced its support to international agricultural research by 66 percent, its support to national agricultural research systems by 71 percent, while USAID technical staff numbers were being reduced by 66 percent. USAID, once the largest donor to the CGIAR, provided more than 25 percent of the CGIAR budget for almost 20 years, but in 1996 provided only about half that. Also the United States, once an intellectual leader in the CGIAR, based largely on the eminence of its integrated Federal/State agricultural research system, has seen its influence decline as it appears to be backing away from one of its "prize offspring" and as support for domestic agricultural research also has waned. However, support for agriculture and agricultural research was also waning elsewhere.

A matter of great concern is the state of the national agricultural research systems (NARS) in developing countries, many of which have declined in capacity over the past decade or two. The U.S. was once a leader, through USAID, in helping to strengthen NARS and to make them more effective, but since 1985 this support has dwindled by 71 percent and appears poised to disappear entirely. This declining support comes at a time when developing countries are facing problems of competition, trade and economic restructuring. The United States has made significant, effective investments in developing country NARS in the past, and continued linkages with these programs are essential. Such linkages must be revitalized in order to recoup elements of past investments and to utilize established capacity not now used effectively.

The continuing decline in support for agricultural research by the Agency for International Development, both in amounts and rates of decline, is alarming. Gary Alex (1996) recently completed a study of USAID Support for Agricultural Research in which he showed significant rates of decline for support for NARS, university development and IARC support. If one looks at the highest year of support for each category and compares it with 1996, both the patterns and rates of decline can be readily seen. Regarding support to NARS, the highest year was 1987, when \$108.5 million was allocated, while the figure for 1996 was \$27.8 million, with a 50 percent drop from 1995 alone. Support for university development reached a high of \$24.9 million in 1991 but was only \$3 million in 1996. Support for the IARCs reached a high of \$48.3 million in 1986 while \$22.4 million was provided in 1996. Finally, AID agricultural staff levels from 1977 to 1996 reached a high of 248 in 1985, but totaled only 84 in June, 1996.

We believe it is in the national interest for the United States in its economic cooperation activities to be involved more in the global agricultural research system--as an advocate, financial supporter, and policy formulator--building on our extensive prior experiences and investments and taking advantage of the clear link such activities have to our economic well-being. Such involvement would not only engage what is the world's largest national agricultural research capacity, but also the great educational establishment represented in the land-grant university system. Research and scientific cooperation for economic development, especially in agriculture, should become a keystone of U.S. foreign policy.

A Research/Agricultural Development/Economic Development/Trade Continuum.

The new paradigm for a global agricultural research system must lead to a system to deal with a continuum of *research, agricultural development, economic development and trade*. The new paradigm will build on previous experience in international agricultural research to boost food production, enhance natural resources and reduce poverty, but would move beyond to build strong linkages with partners in agricultural development, the private sector and international trade. Such a system has been proposed for Latin America and the Caribbean (LAC): TIAFTA (Technology Institutions for Agricultural Free Trade in the Americas) was designed to deal more effectively with economic opportunities brought about by trade liberalization (Bathrick *et al.*, 1996). To move agricultural research away from the former LAC agricultural development objective of import substitution, TIAFTA would develop a system to support agricultural competitiveness, diversification, and responsiveness to markets. Market-driven research underlies the TIAFTA concept, which aims to assure timely access to appropriate information and technology from both public and private research, as well as to enhance skills in management and marketing. In this increasingly trade-driven global economy, the TIAFTA approach has global implications.

Public Support for Agricultural Research

"Given the demonstrated success of agricultural research in bringing science and technology-based solutions to agricultural production constraints, it is paradoxical that agricultural research is now facing a crisis of a global nature.

"In spite of the demonstrated effectiveness of agricultural research, policy makers are not convinced that further investments are necessary or that they can accomplish the seemingly overwhelming task of assuring food security to millions of the poorest of the poor and protecting the environment at the same time."

Petit, Michel J., et al., 1996.

Dr. Nyle Brady in a recent article (Brady, 1996) aptly stated the current situation concerning public funding of agricultural research:

“One last constraint that must be overcome is the decline in public support for agricultural research. Such decline is noted in both the North and South. The relative abundance of food supplies in industrialized countries, coupled with increased private-sector funding in some sectors, is used to justify relative declines in funding for agricultural research. But in most developing countries, where drastic reductions in public support for agricultural research has taken place, there are no compensating increases in private-sector support for scientific activities. Furthermore, decreases in foreign aid by some donor nations, particularly the United States, have compounded the budget problems of research institutions serving the developing countries. The overall decline in support for agricultural research must be reversed if the food needs of the future are to be met.”

Partnerships

“... the message cannot be ignored: without more--and more effective and efficient--agricultural research at all levels, and without global partnerships, we will never meet the challenges of feeding the hungry, providing a living for the poor, sustaining and protecting our natural heritage, and providing the basis for all of us to live in comfort and security.”

Christian Bonte-Friedheim and Kathleen Sheridan, The Globalization of Science: The Place of Agricultural Research. ISNAR, The Hague. 1996.

A key concept of the new paradigm is partnership in global agricultural research, and different means are being explored to identify partners and build necessary working relationships. As an example, the International Rice Research Institute has organized a Council for Partnership on Rice Research in Asia (IRRI, 1996) to enhance mechanisms for rice research partnerships, promote interdependence, and reduce barriers hampering effective research.

There are very few market-focused institutional and operational models in research which systematically are trying to change from past strategies of supporting demand and import substitution economies. Clearly, new approaches are needed to develop new technologies and services to support market-driven economic growth. Here, small and medium-sized countries will be especially vulnerable in the face of new market and trade realities.

Partners in the global system will include public and private advanced research organizations (AROs), national agricultural research systems of developing countries (NARSs) and international agricultural research centers (IARCs), plus private and voluntary organizations (PVOs). These partners will operate in many ways including:

research networks, research consortia, global initiatives aimed at a particular problem or topic, bilateral or multilateral collaboration and scientist-to-scientist collaboration.

Partnership was a major theme of International Centers Week in October, 1996, during which the CGIAR convened a *Global Forum on Agricultural Research* to explore needs and opportunities, the scope for collaboration, and ways to strengthen partnerships. Four major related themes -- biotechnology; genetic resources conservation and utilization; ecoregional research; and public policy and institutional strengthening -- were considered in plenary sessions. A NARS Global Steering Committee presented a proposed *Plan of Action for Strengthening Global Agricultural Research* to improve NARS participation in global research and to strengthen NARS/NARS and NARS/ARO/IARC partnerships. The Global Forum culminated by adopting a *Declaration of Global Partnership in Agricultural Research*.

Partnerships are sought not only with other research institutions but also with stakeholders, including producer associations and agribusiness. A successful organizational model should include linkages to enlist private sector participation in establishing, financing and implementing the agricultural research agenda, and evaluation of the global system's response to technology needs and challenges.

While the U.S. itself has established capacities and relevant international connections to make partnerships work, there is an urgent need to create programmatic, institutional, operational and support structures to nurture needed changes and to identify opportunities in poor countries that should be supported.

What kind of partners does the global system require? It should be obvious that a given NARS or IARC cannot collaborate with a large number of AROs or other partners at the same time, partly because staff numbers alone would preclude that. What is needed is a meshing of the work of those involved in basic science with agricultural scientists who are knowledgeable about particular international problems and to find research sites that suit the needs of the global collaborative research effort. To obtain the talent and basic science capability needed, institutions with depth and excellence in particular fields will be sought.

An Emerging Strong Consensus Concerning the Need for Major Commitments to International Agricultural Research.

Despite the tremendous progress made in food production since World War II, many responsible organizations in the U.S. and worldwide are calling for major research efforts to improve agricultural output over the next half-century. In the U.S. food and sustainability concerns plus advances in trade, science and free markets have led to new ways of thinking. Some of the ideas and findings that are emerging include:

In the months of preparation for the World Food Summit held in November 1996, USDA, the U.S. State Department, the Agency for International Development and the U.S. Treasury Department came together to emphasize the need for the United States to endorse a major agricultural research initiative to help achieve the goal of global food security. This coalescing of support for international agricultural research by major U.S. government agencies recognizes the fact that the U.S. has much to contribute to such efforts and that the U.S. must reassert its leadership role in this area--a leadership role which has deteriorated greatly in recent years.

As a follow-up to the World Food Summit, the Association for International Agriculture and Rural Development (AIARD) convened a forum in Washington, DC, on January 23, 1997 to address the implications of the Summit for the United States.

A recent study by the Center for Strategic and International Studies for the Task Force on U.S. and the Multilateral Development Banks (MDBs) Working Group on Poverty Reduction concluded that it is in the U.S. interest for MDBs to place strong emphasis on helping countries to transform their agriculture sector. Without such assistance, there could well be "backsliding" on global trade liberalization, with detrimental effects on U.S. economic growth. Agricultural research and complementary market-driven services have increasingly become an important role for the MDBs. As an added benefit, the U.S. itself has considerable expertise to support such important multilateral investments in poor countries.

The International Food Policy Research Institute (IFPRI) in recent years has published a very impressive series of analytical papers emphasizing the need to intensify global agricultural research efforts. IFPRI considers these efforts essential in addressing major emerging economic and humanitarian problems related to food production and developing-country economic development needs--as well as to advance U.S. trade interests.

A recent USDA study (Fuglie *et al.* 1996) presented three general conclusions: ... that agricultural research (1) continues to be a solid public investment, and (2) continues to require involvement by the Federal Government, and that (3) the most compelling case for Federal funding is for more basic research, development of technologies where private incentives are weak, and research that informs public and private decision-making. Specific conclusions included: (1) the lack of growth in federal research expenditures and support for maintenance research limits the ability of public research to respond to new demands; (2) some 40 percent of private R&D investments goes to product development, as compared to 7 percent in public research; and (3) investments in public research can lead to increased private research, because of new market opportunities created by scientific and technological advances.

The GREAN Initiative (Global Research on Environmental and Agricultural Nexus), which has the active backing of 20 major land-grant universities, the IARCs and a

half-dozen leading U.S. professional associations of agricultural and natural resource scientists, proposes a major expansion in research by U.S. universities in collaboration with the IARCs and NARS to improve agricultural productivity in an environmentally sustainable manner (Lele and Coffman, 1995). Funding limitations prevent the implementation of this very promising initiative.

In the late 1970s and early-to mid-1980s the Board for International Food and Agricultural Development, working with and through USAID, provided leadership and direction to the development of a number of research programs involving collaboration, primarily among U.S. universities and NARS—with some participation by IARCs. These programs, collectively referred to as CRSPs (Collaborative Research Support Programs), supported partially by USAID, earlier faced major reductions in financial support from AID, despite their widespread success and acclaim. We applaud the fact that the CRSPs appear to be benefiting from recent increased support within the Agency for International Development. This support must be sustained because of the promise that the CRSPs demonstrate as a model for the new paradigm being suggested by the Working Group.

The U.S.-based Trustees of the IARCs have launched an effort to encourage greater support for international agricultural research—with emphasis on better collaboration between the IARCs, U.S. universities, and the U.S. private sector. Emphasis is being placed upon the concept of “complementarity” rather than “competition” among research organizations.

The U.S. National Association of State Universities and Land-Grant Colleges (NASULGC) in its new Action Plan for Agriculture and Natural Resources stressed the importance of: (1) an agricultural system that is highly competitive globally, (2) a safe and secure food and fiber system, (3) a healthy, well-nourished population, (4) greater harmony between agriculture and the environment, (5) economic development and improved quality of life, and (6) society-ready graduates (NASULGC, Nov. 1996). This study pointed out that, “Improving food security in developing countries through agricultural research and education provides a major opportunity to both meet humanitarian needs and to increase global stability,” concluding that it is in the self interest of the United States to improve agriculture in poor countries and thereby increase trade with those countries. To enhance their involvement and effectiveness in global agriculture, many of the land-grant universities have integrated an international dimension as a cross-cutting theme to the tripartite missions of teaching, research and extension/outreach. This is a significant departure from their past international involvement which was characterized largely by roles in development assistance and institution building. The new paradigm for international activities that is emerging on the land-grant campuses recognized that a global dimension is essential in this period of history, and that it greatly enriches the on-campus experience of members of the academic community.

An important new initiative of the Board on Agriculture of NASULGC is GASEPA (Globalizing Agricultural Science and Education Programs for America). GASEPA aims at "assuring a critical mass of ingenious and creative scientists and professionals... attuned to global agricultural and environmental issues,...and...solve the problems of the future," by making "our colleges and universities...windows to the world, through collaborative partnerships with overseas institutions that are mutually beneficial to us and our partners." Although focused primarily on human resource development, GASEPA priorities reflect a need for research and extension/outreach and refer specifically to international education, economic and research partnerships and joint ventures.

To follow the NASULGC plans a little further, we would point to the example of the plans of Washington State University to develop as a "global land-grant university." The concept is based on development of mutually beneficial products or ideas that result from sharing information, technology and resources within global partnerships. Funds from public, foundation and private sources are used to develop "strategic alliances" with institutions around the world (Bathrick *et al.* 1996). One such alliance is with the *Universidad de Chile* in several fields, including integrated pest management, food sciences, agriculture, natural resources, nutrition and international trade. Planning workshops are held between the two universities to help find common interests and identify research responsibilities.

These and other essentially independent efforts all emphasize the same basic point--namely, the need for a greatly expanded emphasis on international agricultural research to meet emerging new problems, the solutions for which demand a renewed emphasis on research. So, despite the great progress through past research efforts, the task is continuing and, in many respects, is more complex and difficult because:

- Many believe that easy gains in food production have in many instances already been realized, and that greater research efforts will be needed to achieve the continued rate of gain necessary to meet steadily growing demands for food and other agricultural products.
- Some attribute the slowing down in the rate of increase in food production in recent years to natural resource and environmental degradation problems associated with agricultural production, while others believe different factors are responsible for such slowing. There is a strong consensus within the agricultural science community that needed agricultural production increases can be achieved without damage to the environment or the natural resource base on which agriculture depends. Where environmental or natural resource degradation problems do result from agricultural practices, it is widely believed such problems can be addressed satisfactorily through research so that needed agricultural productivity gains can be realized without damage to the environment. Increasingly, agricultural research is being conducted with such a "sustainability perspective."

- It is recognized that as yields or productivity levels increase, there must be an ever greater emphasis on "maintenance" research to maintain the gains in production already achieved. Global agricultural research in its international trials and search for genetic resistance or tolerance to pressing agricultural problems has an important role to play in productivity maintenance research. Estimates are that half or more of genetic improvement research at IARCs such as CIMMYT and IRRI must be devoted to maintain production gains already attained.
- Basically, the global agricultural research system was developed to help meet world food needs, and while that goal still exists and, indeed, must be intensified to meet the needs of the next two or three decades, other factors have also come to the fore. In today's trade-driven economic setting, management of farm enterprises must reflect complex issues embracing local, regional, and international competitiveness, including rapid changes in commodity prices and consumer preferences. Such new realities have tremendous impact on the usually under-serviced small- and medium-sized producers.

Agricultural Research as an Investment

Peterson(1976) effectively stated the case for agricultural research:

"Agricultural research is best viewed as an investment. Real resources such as scientific personnel, laboratories and equipment, buildings, etc. are employed to produce a product or output. This output is new knowledge. New knowledge has value because it enables society to increase its total output of goods and services. In the case of agricultural research, the knowledge produced is utilized in two ways. First, it makes possible the production of new or improved inputs for agriculture. These inputs include new higher yielding varieties of crops, more productive breeds of livestock and poultry, more efficient machines and power, and yield-increasing herbicides and insecticides. Second, the knowledge can be used directly by farmers enabling them to produce more efficiently, thereby increasing output for a given level of production cost.

"The value of agricultural research can be measured by the value of additional output that results from greater productivity in agricultural production. This additional output can be food and fiber, or it can be a greater output of nonagricultural products made possible by the release of conventional inputs from agriculture, mainly land and labor."

In the second paragraph, Peterson points to the positive effects of agricultural growth on nonagricultural enterprises, which, of course, helps lead to industrialization. This message should be heeded by policy makers in all countries, including the U.S.

Benefits to the United States from International Agricultural Research

"The bottom line is that our assistance programs foster an environment in which American trade and investment can prosper in developing nations."

George Ferris, Chairman and CEO, Ferris, Baker, Watts.

"After the Korean War, we provided Korea with a lot of wheat, corn and soybean oil. As a poor country, they needed that to survive, but as they got richer, they became good customers,"

Roy Smith, Nebraska Farmer

Returns from Investments in International Agricultural Research through Greater Trade

Simply put, it is good business to help developing countries to improve agricultural research and thereby speed agricultural development and achieve agricultural transformation. Research at the International Food Policy Research Institute (IFPRI) shows that "...each dollar invested in agricultural research [in developing countries] generates \$4.39 of additional imports by those countries" (Pinstrup-Andersen *et al.* 1995). Why would this be so? In the words of the authors, the answer lies in the fact that,

"...agricultural assistance in the form of agricultural research expands developing-country imports from the world market. . .because agricultural research does more than increase agricultural production. The rise in agricultural production boosts incomes within and outside agriculture, which increases demand for other goods and services. This increases economic growth, and more growth leads to more imports. Ultimately, the value of the additional imports actually exceeds the initial investment to research."

Finally, the authors conclude:

"Donor investments in productivity-enhancing agricultural research will yield positive returns for donor countries in the form of new exports."

So research-induced change in developing countries can help improve United States trade, and agricultural research constitutes an essential investment for the U.S. which can generate considerable benefits and returns. These benefits are evident in terms of increased export of agricultural commodities. In fact, more than 50 percent of all U.S. agricultural exports are purchased by lower income developing countries. As the agriculture of developing countries is improved through research, the U.S. also exports many production items including fertilizers, chemicals, farm machinery, processing equipment, etc. Thus, as the agriculture of developing countries improves, the opportunities for exporting both agricultural products and agricultural inputs to developing countries is greatly enhanced. Indeed, agricultural research-induced

change is essential to improve U.S. trade, which is so closely linked to domestic economic growth and job expansion. But, further, let us explore direct benefits to the United States from international research.

Direct Benefits to U.S. Agriculture

A recent IFPRI study (Pardey *et al*, 1996a, 1996b) shows that United States assistance to the CGIAR, in this case to CIMMYT and IRRI, has paid off handsomely in improvements to domestic wheat and rice production. Cost-benefit analyses indicate that from 1970 to 1993 the United States gained at least \$3.4 billion and up to \$13.7 billion from the use of improved wheat varieties developed by CIMMYT, at an investment cost of less than 2 cents for every \$100 of U.S. wheat production. The benefit-cost ratio for U.S. support of CIMMYT is as high as 190 to 1. In the same period the U.S. economy realized at least \$30 million and up to \$1 billion through the use of improved rice varieties developed by IRRI, at an investment cost of about 9 cents per \$100 of U.S. rice production. The above benefits were gained through international research aimed at developing countries, but such research also produced gains in U.S. production because of genetic improvements to wheat and rice. (Figure 6.)

Experts agree on a number of other benefits to the United States of international agricultural research, including the following:

- access to new ideas and technologies;
- access to global germplasm collections;
- helping overcome threats of import of exotic diseases of crops and animals;
- a way to perform "preemptive research" on problems not yet found in the United States, especially incorporating resistance to pests and diseases;
- research linkages for studies of global change;
- participating in specialized global research initiatives in which there is a clear national interest and potential payoff; and
- access to crucial research sites in locations outside the U.S.

Beyond the direct and indirect effects listed above, especially as both USDA and state research budgets are declining and as the new farm bill reduces further the subsidy system, the U.S. needs strong growth in export markets. Agricultural commodities and processed products form a real growth pole of our country's total exports. Most of these shipments go to poorer countries, and this trend is expected to increase.

Figure 6. U.S. Benefits and Costs from CGIAR Wheat and Rice Research

Benefits and Costs	Wheat	Rice
	(millions of 1993 U.S. dollars)	
Present value of benefits	13,653	1,042
Present value of costs	71	63
Benefit-to-cost ratio	190:1	17:1

Source: Pardy, 1996.

Note: Benefits from varietal improvement research are expressed in present value terms for the 1970-93 period; costs represented U.S. government support to international wheat and rice research and cover the 1960-93 period.

The United States Stake in a Greater Global Agricultural Research System

Present U.S. National Capacity and Institutions

Despite declining public financial support for domestic agricultural research, U.S. agricultural research capacity is still the greatest of any country. However, future U.S. capacity is threatened as salary costs often comprise the largest share of institutional budgets, while operating funds for research drop to woefully low levels. Despite such problems, U.S. participation in the global system is not only desirable but essential, because the U.S. is still a leader in basic and strategic research, a major provider of advanced education in the agricultural sciences, and has much to gain from active participation in the global system.

The U.S. land-grant universities (LGUs) are natural participants in the global research system. Their interests are fueled by involvement in solving major international problems, in educating the next generations of agricultural scientists, and in assisting in global agricultural development to help meet national trade and economic goals. In this regard it is fortunate that partnerships with IARCs and NARSs are also highly desirable for the LGUs which represent an immense scientific and educational resource, both domestically and internationally. However, we cannot leave this topic without pointing out how vulnerable and weakened these LGUs can become, if adequate support is not provided to keep them creative, innovative and scientifically strong. At present, not all LGUs are as capable as they once were, and their continuing contributions should not be taken for granted.

Unfortunately, the U.S. lacks effective devices to support continuity of effective participation by the land-grant universities (and USDA) in the global agricultural research system. The Collaborative Research Support Programs (CRSPs) of USAID have provided one means of support for selected institutions to take part in research with NARSs and IARCs in partnerships in which human capital development (education) is linked to strategic and applied research. Despite their success, and their promise as a successful model for the new paradigm being suggested, the CRSPs face increasing financial pressures and their future appears uncertain. Also, at one time USAID had a competitive grant program to link U.S. scientists with the IARCs on important "bottleneck problems," and, while successful, the program was allowed to lapse.

The U.S. agribusiness community and producer organizations can play an important role in the greater global R&D system, especially in helping to generate new markets for products, providing the capital base for increased and sustainable growth, and in providing technical assistance and training. New public/private sector linkages are essential in this demand-driven era.

In the past USAID was a major supporter for international agricultural research but recently that support, too, has lagged. However, even at the height of USAID funding for international agricultural research, the U.S., of all the major countries, was most inadequate in systems to ensure that U.S. institutions and scientists could become involved effectively in international research. As a result, scientists have struggled on, sometimes with individual grants, sometimes on a case-by-case basis with USAID country mission support, sometimes with support from other donors, sometimes with personal funds, or sometimes with help from IARCs or NARSs themselves. Such arrangements have been less than satisfactory, with some good work being done, but always with the looming threat of funding shortfalls or outright halting of support.

The IARCs and NARSs want and need research collaboration with U.S. institutions. For problems that can only be solved on an international basis, most require close linkages with basic research laboratories. Some examples are: the successful collaboration of IRRI and CIAT with two Purdue University scientists, one skilled in biotechnology and the other who worked out the genetic relationships of the fungus that causes rice blast disease and its destructive disease patterns; the work of Cornell University and University of Wisconsin scientists with the International Potato Center (CIP) in enlarging the genetic pool of the potato by incorporating genes from wild *Solanum* relatives; the work of the Peanut CRSP, the Universities of Georgia, North Carolina State, Florida and Texas A&M with ICRISAT in using wild relatives of *Arachis* to widen the genetic pool of peanuts; and the success of the Sorghum and Millet CRSP (INTSORMIL) and its partner NARSs and ICRISAT in developing resistance in sorghum to the parasitic weed *Striga*.

In the cases listed above, the work of all institutions was enhanced by the depth of scientific talent and capacity for basic research at the universities, the wide pool of genetic resources held in collections of the IARCs, and participation of institutions in developing countries with their many valuable research sites. In such work, everyone brings some strength or expertise to the table to the benefit of all. This makes for exciting, dynamic research, and the results can have powerful effects on production agriculture. In the case of the *Striga*-resistant sorghum, an added dimension has been provided in that resistant materials are now being distributed and tested in some Sub-Saharan countries through World Vision, an NGO, with funding from USAID.

Making the U.S. Agricultural Research System More Effective in a Global Research System

The U.S. stands to gain tremendously from increased collaboration in a global agricultural research system. However, to do so more effectively, it must:

- understand that future U.S. development cooperation to support development in poor countries will depend on effective agricultural R&D to support market-led

economic development, and that this is not just the business of USAID or USDA. Indeed, it should be part of the total U.S. economic cooperation effort including, for example, the Departments of Commerce, State, Treasury and the Office of the U.S. Trade Representative, as well as agencies dealing with matters concerning the environment,

- make a firm commitment, provide public resources and develop an improved operational model to ensure broad, effective participation of the LGUs and USDA in international research efforts within the global agricultural research system,
- regain its strong level of support of the CGIAR and the IARCs as a national interest, not just as a responsibility of AID when support has greatly deteriorated,
- urgently begin collaboration to help develop the new capacities for the national agricultural research systems (NARS) in both developing and developed countries,
- invest in domestic strengthening of both LGUs and USDA research to reduce the erosion of public support that threatens the longer range viability of the integrated U.S. Federal/State/private research complex,
- be prepared to invest more in domestic productivity maintenance research, to sustain the gains already made; incidentally, the increased knowledge base that comes from productivity maintenance research has the benefit of adding to the store of knowledge and advancing agricultural development,
- involve the private sector (e. g., U.S. commodity organizations, agribusiness, PVOs) more fully in the total effort, and
- make a more effective global agricultural research system a matter of U.S. policy in our country's linkages with multilateral development banks, FAO, and other international agencies dealing with development.

Our Potential Roles and Benefits

It is clear the United States can benefit from a broadened, more effective role in global agricultural research that is driven by considerations of productivity, sustainability and trade. However, to achieve this will require a changed mindset on the part of policy makers and leaders so they will understand that U.S. involvement in agricultural research is essential to meet needs related to global food production, competitiveness and trade. The mindset change may be more difficult for U.S. institutions that see their role solely as supporting domestic agriculture, without fully understanding that participation in international research can improve their effectiveness in strengthening and developing new opportunities for U.S. agriculture as well as the broader national economy.

The USDA has laboratories located overseas which work mostly on crop and animal protection problems that are not yet present in the United States but pose potential threats to U.S. agriculture. These laboratories should be seen as assets in a global system and should be used strategically in that context, seeking and working with partners to gain crucial biological information concerning the organisms and their threats and, where possible, performing "preemptive research" to lessen the threats to U.S. agriculture.

The U.S. has much to contribute and to gain from global research on genetic resource conservation and utilization. The Biodiversity Convention has made global collaboration more complex, but we must continue to help work through the problems. The result should be continued access to germplasm, a widened gene pool for crops and animals, and a greatly improved knowledge base for both conservation and utilization of genetic resources.

Global Research for Global Trade: Benefits, Potential Impacts

More than ever before, the U. S. is a part of a global economy. We are, more than ever, selling and buying products that are a part of such a global economy. U.S. agricultural research efforts must reflect our role in the global economy and address issues to enhance our competitive position.

It is clearly in the self-interest of the United States to provide strong support for improving developing-country economies by strengthening their agricultural sectors.

Some recommendations from the TIAFTA proposal for LAC (Bathrick, *et al*, 1996), discussed earlier, appear to be relevant as the United States re-thinks its role in the greater global research system:

- a bold new institutional paradigm is needed based on the primacy of "institutional comparative advantage," to provide a basis for establishment of dynamic institutional linkages, operational processes, and working relationship with a broad spectrum of technology-related institutions. Driving concepts for the paradigm would include; "market-driven," "mutual benefit," "operational agility," "responsiveness to local resource constraints," and "responsiveness to market demands."
- differences in national comparative advantages will lead to customized institutions for each country, with new approaches that could be shared across borders.

- new “mindsets” must be created at all institutional levels, e.g., it is good business to work globally to overcome agricultural problems, and working in international research has clear domestic benefits, both in domestic production and in global trade.
- there is need to move quickly on development of new directions and approaches, and to involve essential institutions in the greater global research system.
- the concept of “strategic alliances” needs to be explored to encourage mutual benefits and to gain linkages between real beneficiaries of newly developed technologies.

Recommendations

It is in the national interest of the United States to participate fully and take leadership in a broadened global agricultural research system that supports economic cooperation, growth, and global trade. This proposal represents a considerable shift in emphasis for the United States, from a present foreign aid approach to support global agricultural research, to a new paradigm of international partnerships in agricultural research conducted within a framework of economic cooperation. To make the new paradigm work, changed thinking and different modes of operation will be required in many parts of the Federal government, as well as in universities and private firms, especially since the U.S. domestic research system is somewhat compartmentalized and inward-looking. Only a strong national commitment will bring needed changes, but the result would be the emergence of a more robust and agile research system, to handle both domestic and international problems that hamper U.S. agriculture today and tomorrow as well as helping to expand trade.

We make essentially one overarching recommendation:

“As a matter of high national interest, that the United States support and participate actively in international agricultural research, as part of a new paradigm of global economic cooperation based on trade rather than foreign aid.”

Following are strategies for the implementation of this recommendation:

- There must be active U.S. participation and leadership, involving federal, state and private entities, to conduct global agricultural research to deal with today's problems and opportunities as well as those of tomorrow. This is a goal which cannot be achieved in any other way--and indeed may depend on unprecedented research methods and partnerships.
- Strong national priority must be placed on broad-based effective participation in such a comprehensive global agricultural research system with adequate appropriations to undergird it.
- The Administration must reassert U.S. leadership and advocacy for international agricultural research systems to achieve the goal of a comprehensive global agricultural research system.
- Programs should be established to ensure U.S. participation in collaborative global agricultural research between U.S. advanced research organizations, both public and private, the national agricultural research systems in developing countries as well as more advanced countries (NARS), and international agricultural research

centers (IARCs). The program should be administered in the national interest within the context of global economic cooperation.

- Planning, advocacy, and administration of federal support for international agricultural research should be a national responsibility to ensure broad involvement of agencies and departments whose efforts might be enhanced by international agricultural research, including USAID, USDA, EPA, Interior, Commerce, Office of the U.S. Trade Representative, National Science Foundation, and others.
- In USDA and federal research institutions there should be a broader research agenda that includes global research collaboration; the new agenda should include research to bring good science to support trade objectives and international agreements, as for example, international harmonization of science-based food safety regulations.
- Part of the program related to basic and strategic research could be carried out using a competitive grant mechanism. This program should include a requirement for cost sharing with NARS partners and an invitation for private sector participation in the research.
- Given the potential contributions of international agricultural research to the economies of developing nations as well as to the U.S., and the deterioration in support for U.S. agriculture over the last decade, there should be a major increase in U.S. financial support for such research.
- Such financial support should come from two sources: (1) traditional USDA appropriations, and (2) the International Affairs budget (the 150 account) of the U.S. Congress. The Commission on International Development, Trade and Cooperation is proposing a 3 percent increase in real terms annually for five years in the total International Affairs budget, suggesting that at least half of this increase should go to a revitalized economic growth package which includes international agricultural research as a major, if not primary, component.
- Primary leadership for such an effort should be given, perhaps through a Presidential executive order and/or legislation, to a reformed USAID, which should be an independent agency reporting directly to the President and responsible primarily for international economic development. The name of this agency should be changed to reflect the new emphasis of the agency on cooperation in development rather than "aid." The *Agency for Development Cooperation* or *International Economic Cooperation Agency* are possible new names.

Reference was made earlier in this report to a number of independent initiatives strongly advocating substantial increases in U.S. support for international agricultural research (GREAN, CRSPs, GASEPA, the group of U.S. Trustees of IARCs, IFPRI, USDA and others). The implementation of the recommendations of the Commission on International Trade, Development and Cooperation, along with its Working Group on International Agricultural Research, would provide the means to achieve the objectives of these various independent initiatives. Accordingly, we urge all these groups to provide active, cohesive support to implement the proposals of the Commission and its Research Working Group.

References

- Alex, Gary. 1996. "USAID and Agricultural Research: Review of USAID Support for Agricultural Research." Office of Agriculture and Food Security, U.S. Agency for International Development, Washington, DC. 40 pp. and 5 Annexes.
- Asia-Pacific Association of Agricultural Research Institutions (APAARI). 1996. "Regional Action Plan, Asia and the Pacific, 1998-2000."
- Bantilan, M. C. S. and P. K. Joshi. 1996. "Returns to Research and Diffusion Investments on Wilt Resistance in Pigeonpea." Impact Series No. 1, International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India.
- Bathrick, David D. 1996. "Agricultural Development for Global Well-Being: Expanded Roles for the Multilateral Development Bank." Chemonics International, Inc. Washington, DC. [Prepared for the Center of Strategic and International Studies; Presented to the Task Force on U.S. and the Multilateral Development Banks" Working Group on Poverty Reduction.] 10 pp.
- Bathrick, David D., Kerry J. Byrnes, John G. Stovall, Donna R. Podems. 1996. Technology Institutions for Agricultural Free Trade in the Americas (TIAFTA). Phase I. Agriculture and Rural Development Technical Services Project, AID/LAC/DR/RD, Chemonics International and U.S. Department of Agriculture. 73 pp. + 4 annexes.
- Bonte-Friedheim, Christian and Kathleen Sheridan. 1996. The Globalization of Science. The Place of Agricultural Research. International Service for National Agricultural Research (ISNAR), The Hague, Netherlands. 154 pp.
- Brady, Nyle C. 1996. *Quo Vadis* International Agricultural Research. In: The Globalization of Science: The Place of Agricultural Research. eds. Christian Bonte-Friedheim and Kathleen Sullivan. ISNAR, The Hague, pp. 1-11.
- Business Alliance for International Economic Development. 1996. Foreign Assistance: What's in it for Americans? 23 pp.
- European Initiative for Agricultural Research for Development (EIARD). 1996. "Mechanisms of Regional and Subregional Cooperation in Agricultural Research: Toward Their Operationalisation and a Sustainable Financing." European Coordination Group, EIARD. 27 pp. and 3 annexes.

- European Initiative for Agricultural Research for Development (EIARD). 1996. "Subregional Cooperation in Agricultural Research: Subregional and regional focus and action within a global agricultural research agenda." EIARD. 6 pp.
- Fuglie, Keith, Nicole Ballenger, Kelly Day, Cassandra Klotz, Michael Ollinger, John Reilly, Utpal Vasavada, and Jet Yee. 1996. Agricultural Research and Development: Public and Private Investments Under Alternative Markets and Institutions. Agricultural Economic Report Number 735, Economic Research Service, United States Department of Agriculture. Washington, DC. 76 pp.
- GASEPA. 1996. GASEPA: An Emerging Agenda for a Sustainable Agriculture, Food, Environmental and Natural Resources System. 7 pp. (draft).
- Gijsbers, G. and R. Constant. 1996. "Regionalization of Agricultural Research: Selected Issues." International Service for National Agricultural Research (ISNAR). The Hague, Netherlands. 8 pp.
- Hobbs, Peter and Michael Morris. 1996. "Meeting South Asia's Future Food Requirements From Rice-Wheat Cropping Systems: Priority Issues Facing Researchers in the Post-Green Revolution Era." Natural Resources Group Paper No. 96-01, Maize and Wheat Production System for the Poor, CIMMYT, Mexico City, Mexico. 46 pp.
- ICRISAT. 1996. "Improving the Unimprovable: Succeeding With Pearl Millet." ICRISAT, Hyderabad, India.
- IFPRI. 1996. "Feeding the World, Preventing Poverty and Protecting the Earth - A 2020 Vision." International Food Policy Research Institute, Washington, DC. 28 pp.
- International Potato Center (CIP). 1996. "Late Blight: A Global Initiative." CIP, Lima, Peru. 21 pp.
- International Potato Center (CIP). 1996. "Enhancing the Global Late Blight Network. Report of the project design meeting on the Global Initiative on Late Blight." CIP, Lima, Peru. 43 pp.
- International Rice Research Institute. 1996. "Council for Partnership on Rice Research in Asia. A joint initiative to strengthen partnership among rice research systems in Asia." IRRI, Los Banos, Philippines. 7 pp.
- Keynes, Maynard. 1931. Economic possibilities for our grandchildren. In: Essays in Persuasion. London: Macmillan.

- Lele, Uma, and Ronnie Coffman. 1995. Global Research on the Environmental and Agricultural Nexus for the 21st Century: A Proposal for Collaboration Among U.S. Universities, CGIAR Centers, and Developing Country Institutions. Report of the Taskforce on Research Innovations for Productivity and Sustainability. Cornell University and University of Florida, Gainesville, Florida. 160 pp.
- Linnemann, H., J. DeHoogh, M. A. Keyzer, H. D. J. Van Heemst, R. J. Brolsma, J. N. Bruinsma, P. Buringh, G. J. Staring and C. T. deWit. 1979. MOIRA: Model of International Relations in Agriculture. Report of the Project Group "Food for a Doubling World Population." North Holland Publishing Co., Amsterdam. Chapter 2, "Potential Food Production", pp. 23-74.
- Mosher, Arthur T. 1966. Getting agriculture moving: Essentials for development and modernization. New York: Praeger.
- NASULGC. 1996. "From Issues to Action: An Action Plan for the Board on Agriculture. Agriculture and Natural Resources." National Association of State Universities and Land Grant Colleges, Washington, DC. 28 pp. (draft)
- Office of Technology Assessment, U.S. Congress. 1981. An Assessment of the United States Food and Agricultural Research System. OTA-F-155 (December). p. 67.
- Pardey, Philip G. and Johannes Roseboom. 1989. ISNAR agricultural research indicator series: A global data base on national agricultural research systems. Cambridge: Cambridge University Press.
- Pardey, Philip G., Julian M. Alston, Jason E. Christian, Shenggen Fan. 1996a. "Hidden Harvest: U.S. Benefits From International Research Aid." Food Policy Report, International Food Policy Research Institute, Washington, DC. 17 pp.
- _____, _____, _____, and _____. 1996b. "Summary of a Productive Partnership: The Benefits from U.S. Participation in the CGIAR." Environment and Production Technology Division Discussion Paper No. 18, International Food Policy Research Institute, Washington, DC 61 pp.
- Peterson, Willis L. 1976. "A note on the social returns to private research and development." American Journal of Agricultural Economics. 58(2):324-6.
- Petit, Michel J. and Colleagues. 1996. "The Emergence of a Global Agricultural Research System." Environmentally Sustainable Development Agricultural Research and Extension Group Report No. 1. The World Bank, Washington, DC. 13 pp.

- Pinstrup-Andersen, Per, M. Lundberg, J. L. Garrett. 1995. "Foreign Assistance to Agriculture: A Win-Win Proposition." Food Policy Report, International Food Policy Research Institute, Washington, DC.
- Plucknett, Donald L. 1989. The global agricultural research system: Geared to the needs of an expanding population? World Food Production Conference, Rio de Janeiro, Brazil. November 6-9, 1989. IMC Fertilizer, Inc. 15 pp.
- Plucknett, Donald L. 1992. "Agricultural research in the New World Order." International Sorghum and Millet Conference, International Sorghum and Millet Collaborative Research Support Program (INTSORMIL), Corpus Christi, Texas, July 8-12, 1991. p. 3-17.
- Plucknett, Donald L. 1993. "Science and Agricultural Transformation." IFPRI Lecture Series No. 1. International Food Policy Research Institute, Washington, DC. 34 pp.
- Plucknett, Donald L. 1995. "Public and Private Agricultural Research: History, Roles, Relative Importance, Complementarity." Agricultural Research and Development International, Annandale, Virginia. Report commissioned by Datex, Inc., presented to USAID, Cairo, Egypt. 88 pp.
- Plucknett, Donald L. 1996. Tailoring agricultural research for sub-Saharan Africa. In: Breth, Steven A., ed. 1996. Achieving greater impact from research investments in Africa. Mexico City: Sasakawa Africa Association, p. 29-46.
- Plucknett, Donald L. and Nigel J. H. Smith. 1986. Sustaining agricultural yields: As productivity rises, maintenance research is needed to uphold the gains. Bioscience 36 (1): 40-45.
- Ruttan, Vernon W. 1986. Toward a global agricultural research system: A personal view. Research Policy 15:307-327.
- Serageldin, Ismail. 1996. Milestones of Renewal: A Journey of Hope and Accomplishment. CGIAR Policy Statements. Consultative Group on International Agricultural Research, The World Bank, Washington, DC. 67 pp.
- World Bank. 1996. Rural Development: From Vision to Action. The World Bank, Washington, DC.

February 5, 1997

