

PN-ABD-828
ISBN 63733

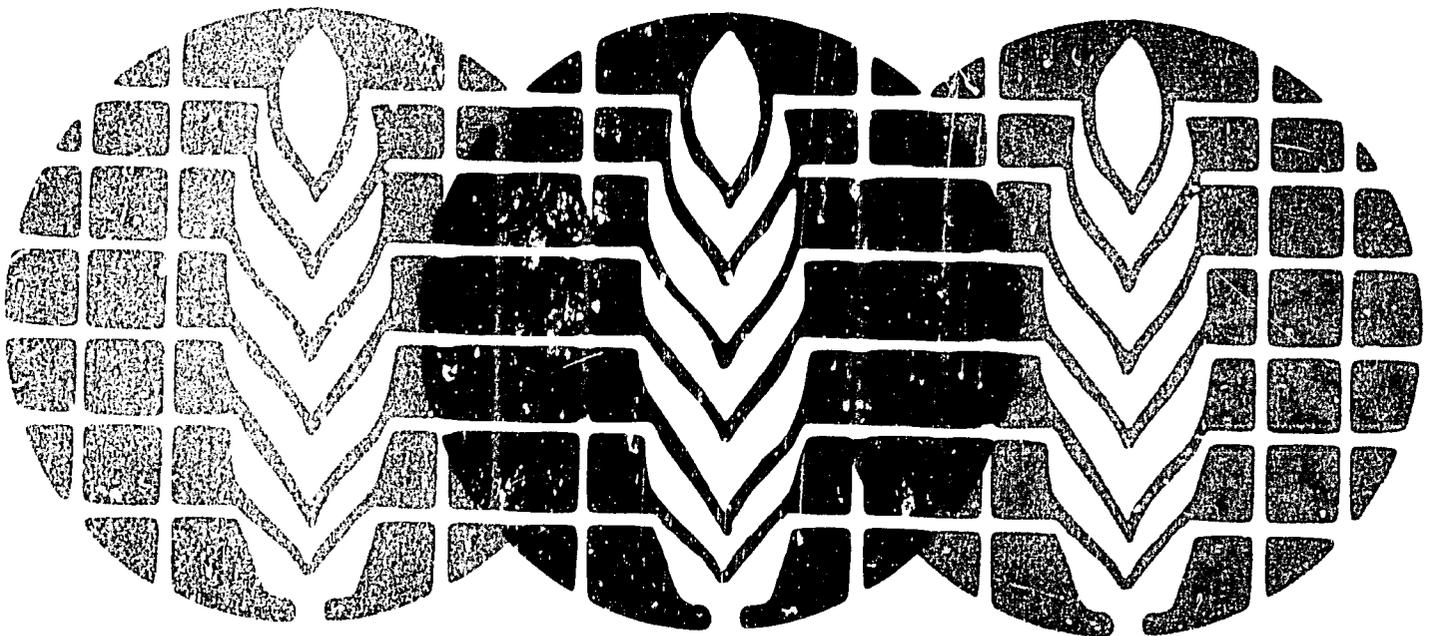


BIFAD

Board for International Food and Agricultural Development

OCCASIONAL PAPER NO. 13

**Development Partnership in
World Agriculture for the 1990s:
A Symposium**



November 1988

Agency for International Development
Washington, D.C. 20523

The Occasional Paper series offers BIFAD an opportunity to circulate papers, reports and studies of interest to those concerned with development issues and the relationship between AID and the broader Title XII community.

Previous Issues in the Occasional Paper series:

- No. 1) Tomorrow's Development Professionals: Where Will the Future Come From? December 1980
- No. 2) The World Food Problems and BIFAD: The Need for Production and Research. December 1980
- No. 3) Economic Incentives for University Faculty Service Overseas. December 1980
- No. 4) American Agricultural Research: Its Role in Agricultural Development Abroad. March 1981
- No. 5) The Implementation of Principles for Effective Participation of Colleges and Universities in International Development Activities. May 1981
- No. 6) U. S. Development Assistance Policy: Middle Income Countries. April 1983
- No. 7) Building Colleges of Agriculture in Africa. May 1986
- No. 8) Staffing of University Contracts for Title XII Country Projects. May 1986
- No. 9) BIFAD Evaluation Strategy and Action Plan for Country Projects. May 1986
- No. 10) Report of the JCARD Panel on Policies Affecting Agriculture. May 1986
- No. 11) Planning for Long-Term Institutional Linkages with Faculties of Agriculture in Africa. February 1987
- No. 12) Environment and Natural Resources: Strategies for Sustainable Agriculture. February 1988

DEVELOPMENT PARTNERSHIP IN WORLD AGRICULTURE FOR THE 1990s:

A SYMPOSIUM

September 14-15, 1988
Dean Acheson Auditorium
Department of State

Sponsored by

THE BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT
Agency for International Development
Washington, D.C. 20523

CONTENTS

Toward a Partnership in World Agriculture for the 1990s . . . A BIFAD Statement on Development Assistance for the Future	1
Symposium Agenda	9
Introduction to Symposium William Lavery, Chairman Board for International Food and Agricultural Development Alan Woods, Administrator Agency for International Development	13
Part I: The Setting	
The U. S. Political and Economic Environment for Foreign Assistance in the 1990s The Honorable Lee Hamilton U. S. House of Representatives	17
Food and Agricultural Development Needs for the 1990s . . . John Mellor, Director International Food Policy Research Institute	31
A Foreign Aid Program for the 1990s: An AID Perspective . . Alan Woods, Administrator Agency for International Development	43
Part II: Meeting the Challenges of the 90s	
The Challenge of Eliminating Hunger Malden Nesheim and P.W.J. Harvey Cornell University	65
Discussant: Carol Capps Church World Service/Lutheran World Relief	73
The Challenge to Enhance Trade through Development. Lon Cesal and Ed Rossmiller Resources for the Future	79
Discussant: Orville Freeman, President. Agriculture Council of America	95

The Challenge of Achieving Sustainable Agricultural Development	101
Fred Hutchinson Ohio State University	
Discussants: Jeffrey Leonard.	107
World Wildlife Fund & Conservation Foundation	
Gerald Thomas.	113
New Mexico State University	

Part III: Regional Challenges

Meeting the Challenges in Africa.	117
Uma Lele The World Bank	
The Honorable Sipho Hezekiel Mamba Minister for Agriculture and Cooperatives, Swaziland	
Meeting the Challenges in Asia.	139
Robert Havener Winrock International	
Meeting the Challenges in Latin America	151
Arthur Coutu North Carolina State University	
Meeting the Challenges in the Near East	165
Elias H. Tuma University of California, Davis	
Symposium Summary	181
Lowell Hardin Purdue University	
Concluding Remarks.	187
William Lavery, Chairman Board for International Food and Agricultural Development	

- - -

BIFAD Symposium Committee:

- John Nicholaides, Chairman
University of Illinois
- Jean Ruley Kearns, BIFAD
University of Arizona
- Steve Wingert
AID/Bureau for Latin America and the Caribbean
- Winfrey Clarke
Virginia State University
- John Stovall
BIFAD staff

- - -

Alice Skelsey, Editor

TOWARD A PARTNERSHIP IN WORLD AGRICULTURE FOR THE 1990s

A BIFAD Statement on Development Assistance for the Future

Introduction

This is a time of rapid world change and transition. These changes present new opportunities to examine the successes and failures of existing foreign assistance programs and to devise more effective programs and approaches to meet future challenges.

Recognizing the timely opportunities for change, BIFAD joined with other interested organizations in a year-long effort to prepare for more informed choices as to the path this nation will follow. This broad-based reexamination, including organizing a national symposium, brought together some of the top development scholars and practitioners to focus on three major challenges for the 1990s and into the 21st century--namely, the challenges of

- * eliminating hunger and poverty,
- * enhancing trade through development, and
- * achieving sustainable agricultural development.

This statement of the BIFAD draws heavily on the presentations and discussions at that symposium, and also on other sources.

The Setting for the 1990s

Although no one knows with any degree of certainty what the future will hold, there are forces of change already working with such strong momentum that they are not likely to be totally reversed. Therefore, it is prudent to recognize that some variables can be taken as "givens," beyond our ability to alter significantly. Some of the "givens" that undergird our assessment are:

* Funding. Continued pressures on government expenditures will make difficult any significant increases in the budget for foreign aid.

* The comparative advantage of the United States in development assistance. It will continue to be based on:

- a U. S. development presence in most developing countries,
- the strong U. S. agricultural science and technology capability,

- the existence of a large number of development institutions--both public and private--with capability and interest in Third World development, and
- a proven U. S. track record in assisting many countries in building institutions and developing human capital.

* The changing needs and conditions in LDCs. Less traditional technical assistance and more collaborative efforts will be required.

* The traditional project system and contracting mechanisms. They will become increasingly inadequate for tapping the vast capacity of the universities (and perhaps other organizations) to meet the challenges of the 1990s and the next century.

* The AID/university partnership. Developed through Title XII, it will have to be strengthened in view of the new requirements of the 1990s.

Eliminating Hunger and Poverty

Perhaps no other world problem is deemed more tragic or generates stronger emotional response than the malnourished or hungry child. The outpouring of sympathy transcends divisions of politics, ideology, race and distance.

Since the enactment of Title XII, "Famine Prevention and Freedom from Hunger," significant progress toward those ends has been made in all regions of the world except for sub-Saharan Africa. The situation there has not improved and in some parts has worsened. Despite the progress made, an estimated 730 million adults and children worldwide do not have enough calories for an active working life. Two factors impinge heavily on this problem--namely, poverty and maldistribution.

As a new decade dawns, several converging forces and trends suggest that the time is ripe for a new assault on the ravages of famine and hunger. Even with one billion new mouths to feed by the turn of the century, John Mellor, Director, International Food Policy Research Institute, in an opening address at the BIFAD symposium offered this optimistic conclusion:

"The time has come when we can abolish hunger in the world in a relatively short period of time . . . The 1990s is a period when we should break hunger's grip on the poor, and the job should be wrapped up in the early part of the next century."

Mellor based his optimistic outlook on the potential for strong economic growth and employment in the developing countries, driven by the agricultural sector. He went on to lay out an action agenda to meet this target.

BIFAD agrees with Mellor that we have learned how to get agriculture moving (in collaboration with host countries) and have the resources to do so, if they are allocated wisely.

Enhancing Trade through Development

Coinciding with the severe economic distress of U. S. farmers during the past few years have been unprecedented attacks by some farm and commodity organizations on foreign aid as the villain responsible for the decline in U. S. exports. As a result several potentially crippling amendments have been offered in the Congress to restrict activities of AID and the World Bank.

The counterargument is that, while some individual farmers and farm groups may be economically disadvantaged by increasing competition from some growing Third World countries, international development creates new cash markets. The persuasive power of this argument, supported by numerous studies and educational material developed in the land grant universities and the U. S. Department of Agriculture, seems to have diminished these assaults--at least from those in leadership positions. Korea and Taiwan are excellent examples. The money spent on development assistance in these countries has been recouped many times through increased trade. This much is clear. Market growth for U. S. agricultural production in the 90s will largely come from the Third World because of large population increases. It is this message that we must better communicate to the American public.

Two specific efforts may help meet this challenge in the 1990s. The first is directed to the United States:

* A development information and education program aimed at U. S. farmers and the general public. It could be carried out by land grant universities and private and voluntary organizations (PVOs), recognizing their existing capabilities, drawing on the vast educational capacity of the Cooperative Extension system and building on the start made by the Biden-Pell Grant program. Land grant universities have a special incentive to support this effort since they have a responsibility for public information and education on such issues and an obligation to explain their involvement and contributions in international development.

We suggest that AID be authorized to make matching grants to universities and PVOs for an amount up to 10 percent of their volume of development work with AID. The grants would be for public information and education programs focused on the international dimensions of agriculture and on issues related to aid and trade.

Experts agree that future market growth for U.S. agriculture will come primarily from the developing world. Thus, a second effort will be targeted through:

* A pilot program to identify selected developing countries with high potential for increasing their demand for U.S. agricultural exports. Projects would be designed by universities, in collaboration with business and farm leaders and the U. S. Departments of Agriculture and Commerce, aimed specifically at developing new markets. Special emphasis would be placed on following up the efforts of the U. S. "AID and Trade" missions to 10 targeted countries.

Achieving Sustainable Agricultural Development

It has become increasingly clear that environmental degradation is a major problem in developing countries and that deterioration of the natural resource base threatens the sustainability of development and especially sustainable agricultural development. Solutions to sustainable food production and food security are inextricably tied to the long-term enhancement of the natural resource base.

BIFAD, AID, and others have examined the complex issues of sustainable agriculture in recent months. Out of these efforts a strategy has emerged for achieving sustainable agricultural development. The essential elements are:

* Investment in human capital to produce the educators and scientists in agriculture, forestry, natural resources and related disciplines required for sustainable agricultural development;

* Systematic development of public sector institutions such as universities and ministries of agriculture to support a science-based agriculture and forestry sector;

* A concerted effort to develop, test and disseminate agricultural and forestry systems that can increase productivity and also maintain or enhance the natural resource base;

* Assistance in developing the indigenous capacity to analyze and formulate public policies that support sustainable agriculture and encourage private sector growth and development.

The Title XII community must join forces with environmental interests and the private sector to support a program of common interest in sustainable agriculture.

The Challenges for Title XII

Meeting the challenges of the 1990s will present new opportunities and challenges for the Title XII community.

Although we believe the basic concepts of Title XII and BIFAD are appropriate for the future, new modes of communication and operation may need to be developed and existing mechanisms and procedures may require overhaul.

At the same time we stress that the basic tasks BIFAD set out to do--institution-building and technology transfer--are far from finished and should continue to receive high priority. Increasingly, however, the tasks have two foci. There still are many places where basic technical assistance in institution building is very much needed. This is especially the case in Africa where only a modest start has been made.

In the advanced developing countries, institution-building strategies must change as their institutions approach "maturity." The older generation of primarily U.S.-trained professionals is moving toward retirement. The second generation staff is largely locally trained and rather provincial. A growing isolation highlights a strong need for intellectual stimulation by contact with the larger international scientific community.

Human resource development needs to continue everywhere, even in the United States. As countries grow and diversify, the need for trained expertise continues unabated in both the public and growing private sectors. Title XII universities, largely from their own resources, continue to train an ever greater number of international students. This is a most important contribution, and the Title XII universities are to be commended for it.

For the 1990s six major challenges face the Title XII partnership:

- * Institutional development in sub-Saharan Africa. Join forces to strengthen six to eight strategically located regional universities in Africa. Major focus would be placed on developing graduate programs to meet Africa's needs in developing sustainable environmental systems for food and fuel production.
- * Professional growth of agricultural scientists in the developing world. Foster communication and collaboration of U. S. and developing world scientists, particularly the application of "leading edge" technology to development problems.
- * Fuller utilization of modern research tools in solving development problems. Encourage the application of biotechnology to the problems of alleviating hunger and engendering economic growth.
- * A world-wide focus on sustainable agriculture. Provide intellectual leadership to the world scientific community in the development of

sustainable agricultural technologies. There is a special challenge in the more fragile environments.

- * A long-term, in-depth study of development programs. Give more focus to development programs, utilizing systematically the strengths of the university in conceptualizing, analyzing and evaluating country, regional and sectoral problems.
- * The use of public information programming and communication media in technology transfer and extension systems. Pioneer new approaches to technology transfer for extension systems around the world, using the opportunities offered by the explosion of communication media.

These new challenges require some innovative modes of assistance in addition to the existing ones:

* Formal linkage agreements between and among U. S. and developing country institutions to promote faculty and informational exchanges between and among individuals and groups.

* Increased and expanded use of collaborative research mechanisms to include:

- increased support for the current CRSPs (they are seriously underfunded),
- a new CRSP on sustainable agriculture, focusing on slash-and-burn agriculture, and
- encouragement of collaborative research activity between and among other U. S. and developing country institutions and scientists through diverse funding sources.

* Increased use of simpler procurement processes for Title XII university services, thereby broadening their role in development, in order to meet the challenges of the 1990s. Such procedures as cooperative agreements could be utilized.

* Establishment of information exchange mechanisms, particularly with respect to "maturing" developing country institutions, including computerized information exchange networks via satellite, publication exchanges, and international conferences, among others.

* Joint activity with PVOs in the area of natural resources and the environment, making more effective the contributions of both communities to sustainable development.

* Joint activity with the private sector in applied research, technology development and other areas of common

interest. Appropriate mechanisms need to be worked out for joint activity.

* Increased public information and education programming, both in the United States and abroad and focusing on individuals and groups that can affect change and growth.

Conclusion

We live in a global economy and interdependent world. U. S. universities' curricula should prepare students to live and work in such a world. They must learn to cope with the rapid changes in science and technology, complex economic conditions, and instantaneous communications, as well as with the related human problems of exploding population, hunger, disease and increasing pressure on natural resources and the environment.

It is clear that U. S. universities truly need to integrate international concerns into the mainstream of their research, instructional and extension programs, attracting the best and the brightest faculty members into the international arena and reinforcing them with increased resources and opportunities. In this manner, Title XII universities can fulfill their obligation not only to themselves and local constituents but also to the interdependent world in which we live.

**DEVELOPMENT PARTNERSHIP IN WORLD AGRICULTURE FOR THE 90s:
HUNGER, SUSTAINABLE AGRICULTURE AND TRADE**

A SYMPOSIUM

September 14-15, 1988
Dean Acheson Auditorium
Department of State
Washington, D. C.

September 14, Morning

Introductions, Opening Ceremonies

Presiding: William E. Lavery, Chairman, BIFAD

Comments: Alan Woods, Administrator, AID

The Setting

**The U. S. Political and Economic Environment for
Foreign Assistance in the 1990s**

The Honorable Lee Hamilton, U. S. House of Representatives

Food and Agricultural Development Needs for the 1990s

John Mellor, Director, International Food Policy Research Institute

Presiding: Wendell Rayburn, Lincoln University, BIFAD Member

A Foreign Aid Program for the 1990s: An AID Perspective

Alan Woods, Administrator, AID

Discussion and Questions from the Audience

Moderator: Paul Findley, former congressman, BIFAD Member

September 14, Afternoon

Meeting the Challenges of the 90s

Presiding: Leo Walsh, University of Wisconsin, BIFAD Member

The Challenge of Eliminating Hunger

Malden Nesheim and P. W. J. Harvey, Cornell University

Discussant: Carol Capps, Church World Service, Lutheran World Relief

The Challenge to Enhance Trade through Development

Ed Rossmiller and Lon Cesal, Center for Food and Agricultural Policy,
Resources for the Future

Discussant: Orville L. Freeman, President
Agriculture Council of America

Presiding: Jean Ruley Kearns, University of Arizona, BIFAD Member

The Challenge of Achieving Sustainable Agricultural Development

Fred Hutchinson, Vice President for Agriculture
Ohio State University

Discussants: Jeffrey Leonard, World Wildlife Fund and
Conservation Foundation
Gerald Thomas, New Mexico State University

Instructions and Challenge to Work Groups

Jean Ruley Kearns, University of Arizona, BIFAD Member

September 14, Evening

Reception and Recognitions

Master of Ceremonies: William McNutt, Jr., BIFAD Member

Dinner Address

M. Peter McPherson, Acting Secretary, U. S. Department of Treasury

September 15, Morning

Regional Challenges

Breakout Groups: Four concurrent regional groups will identify actions to respond to the three challenges for the 90s and develop recommendations for BIFAD.

Meeting the Challenges in Africa

Chairman: Edward L. Saiers, AID/Bureau for Africa

Keynote Speaker: Uma Lele, The World Bank

Discussant: H. S. Mamba, Minister of Agriculture, Swaziland

Rapporteur: Winfrey Clarke, Virginia State University

Meeting the Challenges in Asia

Chairman: William P. Fuller, AID/Bureau for Asia and the Near East

Keynote Speaker: Robert Havener, Winrock International

Discussants: Vernon Ruttan, University of Arkansas

Charles H. Antholt, The World Bank

Rapporteur: Francille Firebaugh, Cornell University

Meeting the Challenges in Latin America

Chairman: Steve Wingert, AID/Bureau for Latin America and the Caribbean

Keynote Speaker: Arthur Coutu, North Carolina State University

Discussants: Martin Piniero, Director General, Inter-American
Institute for Cooperation on Agriculture

Jack H. Vaughn, Conservation International

D. Woods Thomas, Purdue University

Rapporteur: John Nicholaides III, University of Illinois

Meeting the Challenges in the Near East

Chairman: Richard Cobb, AID/Bureau for Asia and the Near East
Keynote Speaker: Elias H. Tuma, University of California, Davis
Discussant: Robert Hill, Utah State University
Rapporteur: Harold Matteson, New Mexico State University

September 15, Afternoon

Plenary Session: Panel Discussion

Presiding: William E. Lavery, BIFAD Chairman
Moderator: Nyle Brady, AID/Senior Assistant Administrator for
Science and Technology

Symposium Summary

Lowell Hardin, Purdue University

Concluding Remarks

William E. Lavery, BIFAD Chairman

Adjourn

INTRODUCTION

William Lavery

This symposium takes a look at the future, assesses the forces of change, and projects a course for Title XII in the decade of the 90s.

It is aimed at helping BIFAD and the Agency for International Development better understand the forces shaping the environment for foreign aid.

It provides for input into the process of change, particularly as these changes relate to Title XII.

It draws upon and complements other activities that are also focused on options for the future, such as those sponsored by Michigan State University and by AID.

The first part of the BIFAD symposium looks at the setting in which development assistance takes place. Keynote addresses by outstanding scholars and leaders in public service and international affairs set the stage.

Next, three major challenges for Title XII in the 1990s are explored: eliminating hunger; achieving sustainable development; enhancing trade.

Each of these challenges are then examined from a regional view: Africa, Asia, Latin America and the Near East. Many noted regional authorities focus on particular needs and problems.

A plenary session, summary, and epilogue--a call to action--complete the symposium proceedings.

The members of the Board and myself look forward to valuable contributions from this symposium in helping all of us meet the great challenges that lie ahead.

Alan Woods*

The Agency for International Development is delighted to join with the Board for International Food and Agricultural Development in this symposium designed to help us in getting ready for the 90s.

The Title XII community has been an important and strategic part of AID's development assistance program during the 25 years since the Agency was established. The university community, of course, was a major contributor to international programs even before the creation of AID.

We value this relationship. We want it to grow. We want it to prosper. And we want it to be a solid component of the basis of our new strategy as we look toward the 1990s.

In order to do this, it is critical that we talk together. In the past we have not always agreed, but we have respected each other, and our different points of view have contributed substantially to the success of our program.

The universities bring a crucial and important resource to our programs for the 1990s. You have the scientific expertise that we are going to need in the future and you have already long-since proved your capacity and your success in institution-building. That is something we are going to have to continue to stress and develop as we look to the challenges of growing enough food and enhancing and protecting the environment during the 1990s.

The world is changing, and it has changed a lot since AID was created. The university community and the Agency are both going to have to change in response to this new world.

We must modify our ways of doing business. The Agency itself is taking a hard look at its own operations. We are looking at our long-term strategies under an activity that is referred to internally as the November report (primarily because we are trying to get it done in November), and we are on schedule.

We are also working with the Foreign Affairs Committee Task Force on Foreign Assistance on the new strategy for foreign assistance in the future. We hope we will also have an opportunity to work with them on ways of streamlining our Agency operations, something we think we need to do.

- - -

*Delivered by Alexander R. Love, AID/Counselor to the Agency

We have done a lot of brainstorming already; this symposium is part of that process.

We are reviewing our programs and procedures. We are looking at our resources, funds, personnel, relationships. We are having a bottom to top examination of what we have been doing in the last 25 years and how we might do business better.

Many of you share with us the feeling that we have become a little bit bureaucratic and somewhat encumbered by our own procedures. We must streamline the Agency's operations. We must be more innovative, and we must become more dynamic.

To do this, we have to discard a lot of procedures and practices that we have adopted over the last 25 years. In this process, we welcome the university input. The university community is essential--an enormous pool of brain power unparalleled anywhere in the world. You can help us be innovative.

It is to our advantage as Americans to be concerned with the less fortunate in the world. Our development assistance programs are important to us as a nation. Sometimes we forget that. We get too caught up in our own day-to-day programs. But they are important to us for three reasons:

First, as humanitarians. The United States does care about the people of the world. For example, our Office of Foreign Disaster Assistance, a small operation within the Agency, is today working on 16 separate disasters. This includes handling the major flooding in Bangladesh and gearing up from the beginning to handle hurricane Gilbert as it sweeps through Jamaica and other parts of the Caribbean.

Development assistance is also important to our long-run economic well-being. You will hear in this symposium the importance of the developing world to the United States as a market--for agricultural goods and for industrial goods. Frequently, we forget how important a market that is.

Finally, economic stability in the developing countries is important to political stability and therefore supports the security of the United States.

The symposium has a marvelous agenda. We are enthusiastic about it. We are looking forward to the outcome of these meetings to help us reshape our own strategy jointly with you in the future.

Part I

The Setting

**The U. S. Political and Economic Environment for Foreign
Assistance in the 1990s**

The Honorable Lee Hamilton
U. S. House of Representatives

Food and Agricultural Development Needs for the 1990s

John Mellor
International Food Policy Research Institute

A Foreign AID Program for the 1990s: An AID Perspective

Alan Woods
Administrator, AID
Delivered by Alexander R. Love, AID/Counselor

Discussion

Moderator: Paul Findley
BIFAD; President, Piper Press

Presiding:

William E. Lavery
Chairman, BIFAD
Wendell Rayburn
BIFAD, Lincoln University

THE U.S. POLITICAL AND ECONOMIC DEVELOPMENT ENVIRONMENT FOR FOREIGN ASSISTANCE IN THE 1990s

A Report on the Activities of the Task Force on Foreign Assistance of the House Committee on Foreign Affairs

The Honorable Lee Hamilton

This bipartisan task force grew out of frustration. Members of Congress--perhaps many of you, too--have become increasingly uneasy about the U. S. foreign assistance program.

This past January several members of the House Committee on Foreign Affairs expressed that frustration and discussed the need for a broad review of the U. S. foreign assistance program. The outcome of that discussion was that Dante Fascell, Chairman of the Committee, and Bill Broomfield, the ranking Republican, asked Ben Gilman of New York and myself to head up the review.

The task force has been ably assisted by the executive branch, particularly Alan Woods, Administrator of AID, and by many specialists both in and outside of government.

Several factors prompted the review. Among them are:

1) A general discomfort based on the feeling that foreign assistance is "not working" and that our program is not achieving its purposes. This discomfort exists among those who make and those who implement foreign assistance programs. It is present in the Congress where generating the necessary political support to enact foreign aid is, as always, a formidable task. It is also reflected in the work product; a bill, when enacted, is loaded down with restrictions, earmarks, conditions.

2) The realization that, given present budget constraints, financial resources for foreign assistance have probably leveled off and may even decline. The future will bring even stronger demands that we "do more with less" and that we find ways to use our resources to get more results with the dollars spent.

3) Concern over shifts in program priorities and fluctuations in funding levels in the 1980s. The foreign aid budget grew from \$10 billion to nearly \$19 billion from FY 1981 to FY 1985 and then dropped to \$14 billion today. Over this period, development assistance declined from 20 percent of the total to 15 percent; food assistance declined from 14 percent to 10 percent; and military assistance increased from 26 percent to 36 percent.

4) A feeling that, 15 years after enactment of "New Directions" and 25 years after enactment of the Foreign Assistance Act, now is an appropriate time for a full-scale review.

5) A sense that the U. S. foreign assistance program must adapt to significant world changes, among them:

- * The United States is no longer the undisputed leader in foreign assistance. It is not even the largest donor. Japan surpassed us this year. Other countries are important players, too. The United States must seek cooperative means of dealing with world problems.
- * A growing internationalization of traditionally national problems--AIDS, acid rain, the greenhouse effect, the ozone layer, environmental degradation, debt, narcotics and urbanization. These problems affect all people and simply cannot be solved by the actions of any one country. Many of them have their roots in poverty and rapid population growth.
- * The dramatic progress of several Third World countries during the last two decades--such as Korea and Taiwan. These countries have now become world economic actors, and even aid donors.
- * In today's world, the focus of U. S. relations with many developing countries is less a matter of aid and more a matter of trade. Twenty years ago trade accounted for 5 percent of the U. S. Gross National Product. Today it accounts for 15 percent. Our trade deficit, of course, has become a major economic concern for us.
- * The lessening of tensions between the superpowers and the possibilities for settlement of some regional conflicts (Afghanistan, southern Africa, Angola, Iran-Iraq war) are changing the world environment and creating new opportunities for peace and development.

The purpose of the task force review is threefold:

- * To identify and assess major problems in U. S. foreign assistance programs;
- * To define more precisely the objectives; and
- * To try to strengthen those programs that can enhance U. S. national interests.

The U. S. foreign assistance program should enhance U. S. foreign policy goals. Coordination with other instruments of policy--diplomatic, economic, military--is essential.

The task force has been working for about six months. Our goal is to reach initial conclusions by the end of the year--in time for members of the Committee to engage in a dialogue with the new administration on the direction of U. S. foreign assistance programs. As to the nature of this end product--a new foreign assistance act, review of the existing act, or the status quo--it is too early to know.

The task force has tried to identify the principal issues which need to be considered. Several key issues have been highlighted. I mention first the issues in economic assistance, then the issues in security assistance.

1) **Objectives--What Should Be the Objectives for U. S. Economic Assistance?**

Chapter One of the Foreign Assistance Act sets forth 33 separate objectives for U. S. economic assistance. These objectives are so numerous that they do not provide meaningful direction and cannot be effectively implemented. All of these 33 objectives may be worthy. I probably voted for most of them. They would probably receive your support, too. However, a program that pursues all objectives risks accomplishing none of them.

My view is that we should first identify key objectives--such as the alleviation of the worst aspects of poverty, increasing economic growth, reduction of environmental degradation, and/or sustainable development--and then we must concentrate our efforts and resources on those objectives.

2) **Accountability--How Can Better Accountability Be Achieved in U. S. Foreign Assistance Programs?**

Accountability covers not just financial accountability but also program and policy accountability.

In some respects, the present law requires too much accountability. Hundreds of reports to the Congress are requested every year. AID generates volumes of information. Even so, I would suggest that we have not yet found the right formula for accountability. Sometimes I think that AID has become an organization geared to document how it spends its funds, and not on how to implement programs and to serve the national interest. AID spends too much time planning and justifying what it is doing, and not enough time implementing projects and determining their impact.

For example:

-- Project papers take two years to produce; another year to get the project approved for funding; another year to choose the contract team and place it in-country. By that time--four years later--conditions have changed and the project has to be redesigned.

-- The annual congressional presentation document weighs more than most congressmen can lift. None of them read it.

-- Some 700 notifications to Congress of project changes are sent to the Hill every year.

-- Country development strategy statements, regional strategies, policy papers, reports to the Congress, few of which are ever read, threaten to engulf us.

-- Functional accounts, earmarks, conditions and restrictions abound.

The result of all this is more paper and information than anyone can even pretend to use.

Much of this paper is produced by extraordinarily competent people. AID personnel are a unique resource. The United States is the only donor with overseas missions sufficiently staffed to have the capability to stay up-to-date on conditions in the recipient country and to engage in a dialogue with local experts.

The point is that the present system of accountability saps this asset, as employees sit at word processors rather than work in the field. The process may keep AID honest; it also keeps them from the development process.

Accountability is clearly necessary and desirable. The question is: Can accountability be made simpler, less time-consuming, more effective?

So far as I can see, there is no easy solution--maybe no solution at all--to the problem of accountability.

One alternative is to focus not on what the Agency intends to do but on the output. This approach requires better ways to measure the impact of the programs. It would also require a drastic transformation of congressional and AID mentality.

Other approaches to accountability are:

- * Fewer reports, conditions and restrictions but more rigorous congressional oversight;

- * More authority and responsibility in the field, including holding mission directors responsible for their programs; and,

- * Rewards to personnel for implementation rather than planning.

None of these will solve the accountability problem.

Because of its difficulty, the task force has asked a management expert to review the whole problem. Some of you here may have some innovative ideas, and we would welcome your suggestions.

3) Trust/Confidence--What Is the Underlying Cause of the Accountability Dilemma?

The underlying reason for the accountability problem is the lack of trust and confidence between the Congress and the executive branch, and between the private sector and the executive branch.

A principal cause of the numerous congressionally mandated earmarks, conditions, restrictions, reporting requirements, is that the Congress has serious doubts about the manner in which the executive branch administers the program.

For its part, the executive branch often sees the Congress as an adversary, not a partner, and doubts its intentions and motivations.

Congress is often criticized for "micromanagement" of the foreign aid program. That micromanagement is a symptom of the lack of confidence. But it often comes about because Congress thinks the law has not been appropriately administered by the executive. For example, Congress has monitored cash transfers to Egypt, in part because one year the cash was used to pay a military debt, in what some of us at least thought to be a violation of U. S. law.

Overcoming this confidence gap, of course, is an on-going process. It will take frequent, and genuine, consultations by the executive branch with the Congress. It will require that the Congress give the executive branch a freer reign to implement the law.

As an aside, I have about reached the conclusion that many of the problems in the foreign assistance program come from its friends not its enemies.

With some exceptions, it is not the opponents of foreign assistance but the proponents who initiate the earmarks, conditions, reports. The friends of foreign assistance demand ever more out of the program, perhaps more than the program can bear.

4) Number of Recipients--Can You Operate a Global Foreign Aid Program When Resources Are Limited, Perhaps Declining, and Increasingly Focused on a Handful of Countries?

The number of country recipients of U. S. economic assistance has doubled in the last decade, from some 40 in 1980 to 88 today.

Nearly 40 percent of all foreign aid resources are allocated to just two countries, Israel and Egypt. Some 97 percent of Economic Security Funds was earmarked in last year's appropriations bill. Under such circumstances how can an agency with limited human and financial resources manage a widely dispersed, global foreign assistance program?

The answer may be that it cannot, and that the program must be changed. Such changes would be, for most of us, painful. They could include eliminating some country programs, removing AID missions from smaller recipients countries, or operating small AID programs through an AID employee detailed to the embassy, or through private voluntary organizations (PVOs) or foundations.

5) Decisionmaking--Can Governmental Decisionmaking Be Improved?

U. S. assistance programs toward developing countries are not well coordinated. There is an annual budget process, but the various pieces are brought in separately by the individual agencies. The pieces are reviewed as a whole by OMB (Office of Management and Budget), but that review is principally from a budget perspective. To the extent coordination occurs, it is often at the field level, within a country mission by a strong ambassador.

From my perspective, there needs to be a single point in the making of U. S. foreign economic policy which brings together the various instruments of that policy--trade, investment, debt, food assistance and sales, economic and security assistance, science and technology, and environmental policy. As foreign assistance becomes an increasingly marginal tool of U. S. policy, and as international economic relations become more complex and interdependent, coordination of the disparate elements of U. S. policy becomes more essential.

Coordination with other foreign assistance donors is also becoming more important.

The options for better coordination of U. S. policy include:

- * A new cabinet position reporting to the President;
- * A position on the White House staff;
- * A reinvigorated IDCA (International Development Cooperation Administration);
- * An Under Secretary of State or Treasury tasked with this mandate;
- * Recreation of the Council on International Economic Policy.

The important issue is not how or where the coordination of policy is undertaken, but that it be undertaken in the manner that best fits a particular administration.

Another part of decisionmaking is implementation. The task force is considering other ways of implementing U. S. foreign assistance programs, including:

- * Creation of a separate entity to implement development assistance, so as to remove developmental and humanitarian assistance from short-term policy objectives;

- * Structuring foreign assistance programs on a regional basis, along the model of the new Fund for Africa;

- * Creation of a separate entity to fund and manage U. S. activity in science and technology;

- * Creation of a separate development foundation to fund the development activities of U. S. PVOs.

6) **Advanced Developing Countries--Should We Continue to Have Programs of Economic Cooperation with Developing Countries Which No Longer Require Concessional Assistance?**

Today, when a country progresses economically beyond the point of requiring direct U. S. concessional assistance, and does not require a continued direct security relationship, we simply terminate our economic development relationship. This may be short-sighted.

For example:

- * Brazil may have enjoyed considerable economic success over the past two decades, but it still has a substantial number of poor citizens and major development problems.

- * AID spends years creating linkages between universities in the United States and those in a developing country, and then suddenly withdraws that support, just when U. S. universities are enjoying benefits in terms of research capability, faculty education and unique opportunities for student study and research.

- * We cut our development ties to a country when U. S. trade and other economic interests could benefit from the relationships which have evolved over several decades.

- * Thailand, for example, in the near future will no longer need U. S. concessional assistance. But it will be mutually beneficial for both of us to continue the links which have been built over the years through the foreign assistance program.

The Japanese and others are puzzled that the United States removes its official development presence in a country just when we could receive benefits from academic research and expertise, trade and investment, technology exchange, and close diplomatic relations.

So, I believe ways need to be found to maintain economic cooperation relations with advanced developing countries. It can be done at modest cost, through scholarship and joint science and technology programs, possibly funded from local currencies or from reflows on earlier loans. We should look at the modest assistance that is provided to Mexico and Brazil, partly through PVOs, and to Portugal through the Bilateral Foundation, to identify models for economic cooperation relations with such countries.

7) Policy Dialogue and Reform--To What Extent Should Assistance Be Tied to Reforms in Recipient Countries?

My view is that U. S. economic assistance programs are most effective when they complement and reinforce an economic dialogue with a recipient country.

The United States simply cannot be in a position where we pump resources into recipient countries with ineffective, even disastrous, economic policies. In such situations, U. S. programs are not effective and cannot succeed.

We must proceed cautiously and flexibly in this area. We must be tolerant of the problems involved in addressing development and economic issues. But, the policy dialogue with recipient countries must go on.

Congress must be careful not to write too many requirements for reform into law. We must be aware of the limitations of conditionality; but tying aid, in some manner, to evidence of progress on economic reforms must continue to be a part of U. S. development policy.

Now let me turn to security assistance.

1) Priorities--What Is the Proper Balance among the Various Categories of Assistance?

Comparing the 1978 foreign assistance program with the 1987 program, resources devoted to development assistance declined from 21 percent of the total to 15 percent; food assistance declined from 14 percent to 10 percent; and military assistance increased from 26 percent to 36 percent.

At the beginning of the Reagan administration, the military assistance program (MAP) account, which provides weapons and defense services to friendly foreign countries on a grant basis, was \$110 million. By 1987, it was \$950 million. The Foreign Military Sales (FMS) account was about \$3 billion. By 1987, it

was \$5 billion. All countries received major increases, including five and 10-fold increases in countries where U. S. interests could not be classified as vital.

With the onset of Gramm-Rudman budget constraints, fiscal year 1983 signalled the first major cutbacks in the program after six years of major increases. Today we face the problem of rising expectations among foreign assistance recipients, and we must decide what relatively few countries will receive the bulk of the funding. We should rely more on the use of the less expensive grant International Military Education and Training (IMET) programs, for those second-tier countries where a U. S. military presence may be desirable but is not essential.

We also have to think about concessionality. In the 1970s, the direction was toward less concessional forms of assistance as a means of encouraging graduation to a full cash sales relationship. We then found that many countries could not bear the debt burden of high-interest military credits. Thus, in the 1980s the program has shifted back to what is now largely a grant program, with selected concessional programs for a few developed countries like Portugal and Greece. This trend will continue for the short-term, particularly if AID dollars remain constricted. But encouraging a reduction in the number of recipients remains a long-term program goal.

2) **Base Rights--Should Military Assistance Funds Be Used to Fund U. S. Access to Foreign Military Bases?**

The base-rights countries are demanding more aid. With the fiscal constraints, Congress is finding it hard to provide all the funds the countries demand and the executive requests. In the early 1980s the executive branch pledged to base-rights countries a doubling, tripling, and sometimes even greater increase in military aid funding.

For example, at the onset of the Reagan administration, military assistance to Spain was about \$150 million a year. By 1985, Spain was receiving \$400 million a year. Military aid to Turkey was about \$250 million, but by 1985 had reached about \$700 million. Portugal received \$52.8 million in military aid, but in 1985 received \$128 million. Greece received \$180 million but by 1985 Greece was receiving about \$500 million.

Congress was able to meet those requests then but it cannot do so now. Gramm-Rudman squeezed all growth out of the foreign aid program. In recent years, aid requests for base-rights countries have been scaled back. Having received large aid commitments in the early 1980s, base-rights countries now expect even more as their agreements with the United States are renegotiated. When Congress is unable to support a new round of increased funding, these countries feel that commitments have been violated.

These circumstances have created major foreign policy problems for the United States. Host countries are now more resistant to U. S. military activities from their territories, and the Congress is less willing to pay for U. S. forces in hostile or unsympathetic countries.

Obviously, the executive branch needs at least some expression from the Congress that when it enters base negotiations, aid commitments can be funded. At the same time, the executive must be careful in its representation to host countries and maintain close consultation with the Congress throughout the negotiations.

Fledges of additional military assistance for base-rights access may no longer be viable. We will have to analyze carefully the importance of such bases for the achievement of our security objectives. We may have to adjust to having fewer military facilities and ask our allies to pick up tasks left by the lack of base access. This approach has showed signs of succeeding in the case of Spain, where we were able to reach a new agreement on reduced base access in exchange for an end to military assistance.

Where such bases are vital to our national security, we may have to move toward other incentives to get base access. Rent, grants from Department of Defense stocks, or agreements on increased defense industrial cooperation are all options.

Such cooperation might take the form of coproduction or coassembly agreements, which enable foreign countries to share technologies and develop their own defense industries. These coproduction arrangements offer recipient countries improved prospects for industrial development that may be a greater incentive in some instances than grants of military assistance for weapons made entirely in the United States.

3) **Accountability**--How Can We Assure that Military Assistance Funds Can Be Accounted For?

Accountability has also been a problem in U. S. security programs. The Department of Defense accounting system for keeping track of foreign military sales, billings and receipts, to put it simply, is a mess. Coproduction arrangements are, in large part, unaccounted for. In some instances they result in illicit third-country transfers by a coproduction partner involving items of U. S. content.

The arms sales business in recent years has also experienced a new phenomenon, namely "offsets." Offsets take two forms: 1) an indirect offset, whereby foreign countries demand that U. S. companies agree to market non-defense products made in that country in exchange for buying a U. S.-made weapons system; 2) a direct offset--a demand from a foreign country that a U. S. company provide them with a "piece of the action" in the sale of a weapon system by asking for coproduction. Offsets are becoming

a growing part of the arms sales process without a clear U. S. policy.

Among other steps, we need to implement a centralized accounting system within the Department of Defense for military sales so that we can account for all of our aid dollars, as well as funds put in escrow by foreign governments. Closer monitoring of the military assistance programs and tough sanctions, including suspension of coproduction agreements or other pending arms sales, are needed to prevent illicit third-country transfers.

There are many other issues, among them: How to encourage the "graduation" of aid recipients to a straight military sales relationship? How to provide military assistance to friendly foreign countries that have only police forces and not regular armies?

Now let me turn to the role of the institutions represented by this group here today.

We in Congress are mindful of the enormous contribution to development progress that has been made by American academic institutions. This has been especially true of the agricultural sciences. You have contributed through the sharing of your knowledge and technology. You have helped to create the intellectual and educational basis for sustaining economic growth--especially in agriculture--in many countries of the Third World.

Advanced study plays a critical role in development. For most Third World students, America is still the country of choice for advanced education. While some of these students are supported by foreign aid, most come on their own.

If one could calculate the total value of training provided to future leaders, it would dwarf the value of the bilateral assistance program. There is no better investment than the investment in people. Your continuing commitment to provide these students a superior academic experience is a singularly important contribution to U. S. policy objectives and the development process.

U.S.-educated leaders of the Third World seek to maintain their connections with their U. S. academic institutions. These sophisticated, proud and accomplished people want to find ways to work, as partners with the centers of research and learning in this country. American universities must find ways to respond to the possibilities of international scientific and technological cooperation even as our own internal pressures mount to guard our secrets in a competitive world.

Through the expertise of U. S. land grant universities, U. S. cooperatives and the agribusiness community, U. S. aid has

effectively made agriculture a specialty which other donors cannot match.

In the developing world agriculture changes at an accelerating pace. In Asia and the Near East, many countries are becoming self-sufficient in the production of cereal grains and are entering a period of diversification into fruits, vegetables, oil and animal proteins. Agro-industry is an important area of growth, offering the opportunity for new sources of employment and income.

Yet production efficiencies remain low, in part because of technology constraints, but more frequently because of poor policy and poor management. This is particularly true in sub-Saharan Africa where basic food production challenges remain formidable.

For many, the cost of high-input agriculture has become excessive, both for farms and for government-subsidized economies. Efficiency is not simply a matter of improving the basic technology of production, it also involves the difficult factors of human skills and supportive policies.

Developing countries often increase food production by bludgeoning their resource base. This kind of success has its costs:

- * Marginal land which was in forests has been brought under production.

- * Poorly managed and maintained irrigation systems lead to salinization and water-logging.

- * Excessive use of fertilizers and pesticides is expensive and pollutes.

- * Slash-and-burn farming can destroy fragile ecosystems and contribute to the greenhouse effect.

- * Deforestation in the Himalayas silts up the rivers and dams downstream and contributes to massive flooding in Bangladesh.

Effective natural resources management is an imperative for the 1990s and beyond.

For basic agricultural production to become sustainable, it will take an integrated approach to research, technology and management. For those of you engaged in this important work, it will mean adjusting to a new and more complex agenda and working with a wide range of disciplines.

The failure to deal with these challenges now has global not just domestic consequences.

Only by working together on this global agenda can we prevail against the long-term problems of development. Only by mobilizing the best talent in universities, government and the private sector, can we use our comparative advantage and retain our leadership.

We look to the universities of America to assist in meeting the challenge of the development agenda. It is no longer a matter of foreign aid, extending to others the benefit of our already achieved knowledge and experience. It is now a matter of long-term national interest that we, together with our sophisticated Third World partners, find answers to these global problems.

FOOD AND AGRICULTURAL DEVELOPMENT NEEDS FOR THE 1990s

John W. Mellor*

The United States has had a long and distinguished record in foreign assistance to the development of the agricultural sector in developing countries.

However, there have been times when this emphasis has been a cry in the wilderness. This was particularly true when the thrust of development policy in developing countries and their allocation of resources was substantially towards capital-intensive industrial development concentrated in major metropolitan centers, with the consequent neglect of resource allocation to the agricultural sector.

When policies finally become more propitious in developing countries for building development on the solid foundation of agriculture and the rural sector, the fact that the United States maintained its continuous concern with agricultural development and placed that emphasis particularly in the area of technological change, ensured that at least the basic technological base and much of the conceptual knowledge was available for the task.

The most dramatic case of this, of course, was India. The development strategy of the first and second five-year plans in particular left few resources for the modernization of the agricultural sector. A focused foreign assistance program laid the groundwork not only for the research system in India which could adopt the breakthroughs in plant breeding to the specific purposes of India, but to develop a broad institutional base necessary for the rapid spread of these innovations.

Of course, even in a very small country, let alone a massive one like India, the course of events is not determined by foreign assistance, but foreign assistance can make a tremendous difference in that course of events when the basic forces become more favorable.

The development of the technology base, trained manpower and other institutional bases for moving the agricultural sector must be pursued over a long period of time to be effective.

Unfortunately, there have been frequent shifts and indeed fads in the development assistance business in the United States and elsewhere which helped divert attention away from the proper focus of institutional development. Only a few perceptive and dedicated people kept the constant flow of aid toward those institutions that have had such a beneficial impact in developing countries.

- - -

*Readers interested in a list of references for this paper may contact the author.

Given the increased emphasis on the agricultural sector and knowledge of how agriculture can be the driving force for development, or, as I have put it in another paper, how agriculture can provide the road to industrialization and modernization for present-day developing countries, the fruits of these efforts are particularly apparent recently.

Structural Imbalances and the Record of Development

The decade of the 1990s represents an obvious guide post on the long road to development. At no other time has it been more crucial if we are to build a better road to head into the 1990s in the same direction and move in a coordinated fashion. To do so, it is important to ask ourselves some questions. What will be the environment for development and foreign assistance in the 1990s? What major potentials and problems lie ahead for us?

It is perhaps the dominant view in development circles that the 1960s and 1970s were the golden age of development, and that developing countries cannot achieve as rapid rates of growth as were achieved at that time.

This pessimistic view arises because growth in developing countries is typically seen as dependent on exports to the developed countries, which in turn finance essential capital goods imports. Because developed countries are growing less rapidly now and perhaps even more important because they have escalated restrictions on their trade, the prospects for developing country growth seem slim. Furthermore, developing countries' massive debt crisis prevents export earnings from being used to finance growth.

Since these circumstances seem so intractable, the implication is that the 1960s and the 1970s were an aberration on the development road.

I want to argue strongly to the contrary. The aberration along the road of development was the 1980s.

This was a period of massive structural imbalances generated out of policies, some inevitable and misguided, from the 1970s. As a result of these gross imbalances, many developing countries were able to take on excessive burdens of debt far out-running their capacities for growth at that time. The developed countries had to restrain their economies substantially, including a substantial recession.

Further imbalances in the budgets of the United States and its trade balance have had large global effects. Successive oil shocks were difficult for some countries to absorb. While the first shock of increased prices created few problems, the second shock was disruptive to oil-importing and oil-exporting countries alike. Although the sharp decline in oil prices after the second shock should have been predicted, it was not and again created a

number of adjustment problems for oil exporters and importers. The burden of this disruption fell particularly heavily on primary commodities through a long period of extraordinarily depressed prices.

While one can argue that technology forces the long-term price trend of primary commodity prices downward, the extent of the decline in the 1980s was not a normal part of that trend. While these problems are not yet behind us, most of them are well on their way to being manageable.

Looking ahead from the imbalances of the 1980s, it is important to recognize that growth in developing countries is a combination of the processes of technological development, institutional development, and human-capital formation, all of which rapidly increase the productivity of resources in developing countries.

To turn the point around, developing countries are poor and low income because the productivity of their resources is poor. The basis of growth is not exports to developed countries, but developmental processes that increase productivity. Those processes, of course, like any complex economic processes, can be set back or put off the track completely by the kinds of structural problems that occurred in the 1980s.

But we are about to get back on track. Doing so will offer an opportunity for much higher returns to all resources invested in development, including those from foreign assistance.

Growth Strategies and Foreign Assistance

In addition to the gross structural imbalances, the 1980s was also a period of searching for the most effective types of foreign assistance programs.

Foreign assistance, like everything else, takes on the characteristics of the environment in which it operates, and thus has always been shown to have inefficiencies in the development context. If the host institutions and human capital in recipient countries are underdeveloped, they do not use foreign assistance much more effectively than their own resources.

But that is not to say that assistance does not have substantial impact, with very high returns in the long run. Quite simply, in the structural context of the 1980s, the deficiencies of foreign assistance became spotlighted. And, because there was relatively little growth or slowing down of growth in much of the developing world, foreign assistance performed pretty badly. But this, too, offers an opportunity because it spotlights deficiencies which are correctable.

One of the major deficiencies in foreign assistance is the lack of coordination within the donor community. In the 1950s,

the United States dominated the foreign assistance business and coordination was little or no problem. Now the United States provides only 29 percent of the total official development assistance in the world. Since that is heavily concentrated on just a few countries, the United States' ability to direct, coordinate and influence foreign assistance in the bulk of the developing world is very small indeed. To take an extreme example, the United States currently provides only 9 percent of total official development flows to India.

The number of actors on the foreign assistance stage is so large that we must turn to something analogous to market processes rather than meetings if we are to have proper coordination.

What is needed is broad agreement amongst donors on an appropriate development strategy. That strategy must meet both growth and equity needs and, although foreign trade can be an important part of the strategy, it cannot be an export-led strategy as was the case for a country like South Korea. This means that the domestic market must be the driving force for growth in the domestic economy of most developing countries.

Rapid growth in a large domestic market is only possible in low-income countries dominated by agriculture if incomes are rising in the agricultural sector.

Thus I argue for an initial emphasis on agriculture to raise factor productivity in that sector, providing a stimulus for effective demand and even more rapid growth in nonagricultural sector.

In effect, public support, particularly of technological change in agriculture, provides the most important engine for the overall growth process. Those processes lead to a rapid transformation of the economy and a situation in which the more rapid the rate of growth in agriculture, the more rapid its relative decline as a percentage of the total economy. That conundrum is one of the most clearly documented facts of economic development.

In the context of a broadly agreed upon strategy of this type, various countries will find their foreign assistance supported by somewhat differing constituencies and will use their resources to deal with corresponding aspects of the problem. With a consensus on the overall strategy, there will be a natural coordination of assistance and development efforts.

This is in sharp contrast to the last few decades in which we have gone from one development fad to another, with each of the fads representing only a small portion of the developmental process and all donors clustering around that particular fad. In moving from one fad to another, recipient countries were overwhelmed with far too much assistance for certain aspects of their development and with gross neglect of others. Even the

object of the fad suffered, because to be successful, even those objects needed the support of a broader approach.

I now want to proceed within the context of a broadly accepted development strategy to discuss some principal problem areas with particular opportunities for progress in 1990s. You will note a correspondence between these priorities for the 1990s and the sub-themes for this symposium. That, of course, is not an accident. We in the developed community interact with each other. We understand each other's ideals and our thinking moves ahead. We may not have complete agreement at any point in time, but the central tendency of our thought does seem to move together.

Abolition of Hunger

We have reached the point that world hunger can be abolished in a relatively short period of time, that is, over the next 15 to 20 years. The remainder of the 1980s is a period when we should prepare ourselves for that action. In the 1990s, we can break hunger's grip on the poor, completing the job in the early part of the next century. To abolish hunger, we must recognize the following:

1) It is a large task, not a small one. A minimum of 700 million people in the world are so poor that they cannot get adequate food for even basic healthy active life. Exercises to define hunger and poverty in a way that drastically reduces those numbers represent a macabre activity. Any of us would consider it extraordinarily unfair and unjust if we were randomly plunked down in the world as one of those 700 million. We would not find it acceptable that the lower quarter of that group would be raised without the rest.

2) Because the problem is large and requires substantial resources, it must be seen in a process of development that leads to self-reliance for those people.

3) We must recognize that the development process for dealing with this problem of poverty will, under the best of circumstances and the clearest diagnosis, take 15 to 20 years to achieve.

4) We must recognize that we have the basic materials and goods, particularly the food, to eliminate that degree of poverty and hunger immediately. We must recognize, however, that building the institutions to transfer those resources will themselves take three to five years.

5) Finally, we must realize that the world has changed from the last 20 to 30 years in a way that makes tackling this task feasible. Poverty has already been greatly reduced in countries that have experienced rapid growth and a large majority of the world's people are now in countries about to experience rapid

growth in the near future. We understand far better than we did 20 or 30 years ago the processes of rural, agriculture-based growth that will most benefit the poor. And we see that process in a total development strategy, not just as an isolated case. Finally, the world itself is a far wealthier place so that a much smaller proportion of its resources will be needed to tackle a problem that is more clearly definable, more clearly solvable than it was in the past.

Here, I must clarify a popular misunderstanding. There is a correct perception in the world that we are holding large surpluses of food in developed countries; that food prices have been relatively low; and that many developing countries that used to be deficient in food now have surpluses.

This has led to a view that hunger and poverty in the world are problems not of production but of inequitable distribution. The implication is that all we need do is redistribute existing resources in order to take care of the poverty. This view distracts attention from half of the problem and it does so because it is only half the truth.

The view that hunger is only a distribution problem begs the question, "How are the poor to generate the purchasing power to effect a more equitable distribution of food?"

In large part, the poor live in rural areas and make their living in agriculture. The only way we can get purchasing power into their hands, at least in a way that can be sustained, is through processes of self-reliant growth, by increasing the productivity of their labor and their land so they can produce more agricultural products than in the past. That will give them the means to buy a substantial part of that agricultural production. The processes involve complex interactions between the agricultural and nonagricultural sectors.

We now have studies indicating clearly that a major factor in bringing poor people in rural areas into the development process is infrastructure.

Roads, electrification and communication facilities integrate farmers in those areas into the larger society and provide access to modern technology in agriculture, particularly high-yielding varieties, and the purchase of necessary inputs and of consumption goods. Throughout the developing world, there is a very close relationship between rapid diminution of poverty and the development of that rural infrastructure.

Food from the developed countries can pay a major portion of the cost of building the infrastructure in rural areas which will uplift the poor, creating a neat connection between short-term alleviation of poverty through relief efforts and the long-term effort to achieve self-reliant growth.

In addition, in order to attack the problem of hunger in the world, we need certain types of knowledge. We need to know the geographic distribution of poverty, in what parts of the world it exists, and in what kinds of countries. We need to know the extent to which it is in urban and in rural areas. We need to know how it relates to the agricultural potential of the environment and we need to know how it affects various individuals, including women and children.

We find that in Africa, Asia and Latin America, respectively, 90 percent, 80 percent, and 60 percent of the poor are in rural areas. Hence, there must be an emphasis on rural development.

We find another very important factor--that, in the very poor countries, the hungry and the poor are particularly concentrated in rural areas that have a substantial potential for improvement. On the order of one-third of the world's poor are in very poor countries and living in rural areas of relatively high population density and good agricultural potential, but a potential that is not realized as a result of very poor infrastructure.

That pattern shifts sharply as countries develop. Middle-income developing countries, which are now achieving rapid rates of growth, have their poor also concentrated substantially in rural areas, but they are in rural areas that have the poorer potentials for agricultural growth, areas like the northeast of Thailand and the northeast of Brazil. Thus a major portion of the poor are in areas where the technologically-based agricultural growth process with massive development of infrastructure would bring about a very sharp reduction in poverty in a relatively short period of time.

There are two lessons from the above:

- 1) If we want to eliminate hunger and poverty in the world, we must get agriculture moving in developing countries; and

- 2) Much of this poverty is in very poor countries, particularly in South Asia where there is a sharp income constraint to dealing with both poverty and development problems.

What kinds of programs do we need in order to deal with these problems? In the final analysis, the totality of programs is extraordinarily complex and interactive. Countries gradually have to develop the capacity to do many things in order to get rapid growth. Hence, they must enlarge their supply of human capital as rapidly as possible so that they can build the institutions necessary to deal with these problems. But in the interest of simplification I would like to suggest three particular thrusts which are especially important.

The first, of course, is development of the institutions for technological development. That must be the engine for the longer term provision of self-reliant growth and the elimination of poverty.

This means continuing with the same old things that AID has been concentrating on for such a long time:

The development of agricultural universities; the development of national agricultural research systems; the development of institutions for fertilizer distribution in both the public and private sectors and for seed production; and, underlying all of that, the development of human capital and its effective organization into these institutions.

It is essential that these activities continue and that the extraordinary opportunity in this area be grasped and realized.

Secondly, it is time to face up to a simple truth--one that at my institute we are spending millions of dollars doing research to show--roads are important to development.

How wasteful that research is when a conversation with anybody in any village in developing countries, from the poorest people to the most well-to-do will tell you that what they want most are roads, schools and clinics. And they fully recognize that the second and third are not possible without the first.

Roads in very poor countries are built substantially on food. That is to say, they can be built labor-intensively, and those laborers will spend practically all of their additional income on food.

As long as surpluses of labor in poor countries and surpluses of food in rich countries are not put together, we will be grossly constrained in our efforts to remove hunger and poverty.

We must remember, however, that a road that deteriorates quickly is insufficient, so that we have to analyze carefully what additional resources are needed beyond labor in order to make that road into a permanent, all-weather establishment.

There are, of course, many other rural employment schemes besides road building that can be helpful in development, including the planting of trees and the building of diversion ditches and small-scale irrigation schemes. Indeed, there is a need for a massive program of public works projects. Because of the need for both food-for-labor and other inputs, there must be a coordination of food aid and financial aid if these processes are to proceed effectively. Unfortunately, we operate in a world in which that coordination rarely occurs.

The third element for bringing about the reduction in poverty in a way that is oriented towards long-term development is a feeding program for the young people of the developing

countries, or what we would call a school-lunch program. This has now been tested in a wide variety of locations and on all scales, including the very large scale.

It is clear that, in the very poor countries, a school lunch program brings children to school. To put it bluntly, the money the child earns in the form of being fed in school becomes fully competitive with the money that child earns in gathering grass, herding cattle and the other kinds of activities that very poor children in developing countries do all day, day after day.

Thus, school-lunch programs reduce hunger in the world immediately and build human capital over the long term. If a country has very scarce resources, as the poor countries always do, there may be debates as to whether a school-lunch program is as effective in bringing about a particular reduction in human suffering as would a special program for immediate post-weaning children. Dollar for dollar, one may get somewhat more impact at a low level of expenditure for those kinds of programs. But those programs are very labor- and trained-personnel intensive and therefore may be more difficult to implement. If we want to have a massive impact, a school-lunch program makes sense and then as resources permit other programs should be added.

I should not end this discussion without commenting on the environment. We in the United States and in other developed countries are very concerned about the environmental deterioration that is going on all around us. That concern properly and naturally spills over to the developing countries.

However, we must recognize that in developed countries, environmental destruction is primarily a product of wealth and in very poor countries it is primarily a problem of poverty.

The most serious environmental destruction in developing countries is the expansion of population pressure on a limited land base, pushing cultivation out onto more and more fragile resources. Development processes we are talking about at this symposium will reduce those population pressures. They can be complemented by using public works programs with high employment content to rehabilitate land through reforestation, contour bunding, and various other practices.

Reduced Cost of Production in Agriculture

Agriculture is naturally a sector of decreasing returns as efforts to increase production with a limited land area cause greater intensification, driving down returns to the factors of production.

There is one way to defeat this process: New technology that allows intensification without reducing productivity. That is what the Green Revolution is all about. Without improved technology, food costs more and more as populations grow.

But there is a more important reason to reduce the cost of production in agriculture or to increase factor productivity: If agriculture is to stimulate other sectors, it must do so through increased real incomes generated in the agricultural sector which, through the increased expenditure they create, act as a stimulus to other sectors of the economy. There must be rising real productivity in agriculture for those processes to develop.

We of course have had major breakthroughs in productivity of cereals with the high-yielding crop varieties. The breakthroughs in biotechnology will facilitate further progress in these areas, but there is another emerging area of focus for agricultural technology. Increasingly, developing countries must intensify their agriculture beyond the basic food staples. They must produce more fruit, vegetables and livestock commodities to generate more income per hectare of land. They can then use their profits to finance cereal imports, which can be more efficiently produced in countries such as the United States. However, to succeed in these labor-intensive activities, research is needed in developing more appropriate varieties with higher yields, more resistant to disease, and able to deal with the complex problems of processing, marketing and storage.

To reiterate: First, there needs to be an emphasis on agricultural research and the institutions that support it.

Secondly, there needs to be a massive building of infrastructure.

How do we approach those problems?

On the first, we know that the United States and its foreign assistance programs have a massive comparative advantage built on the strength of its research system and vast experience in promulgating new ideas to other countries over the last few decades. We must redouble our efforts in that direction.

With respect to infrastructure, we have an important knowledge base, and we have large surpluses of food commodities or the food production capability necessary to back-up such an effort. Negotiations in the international arena can be used to see that there is a coordinated effort along these lines.

Trade

I indicated at the beginning that it is not likely that development can be led by export growth, in the sense that the bulk of the demand for increased output from a developing country will come from abroad. Development must be driven by growth in their domestic demand.

Nevertheless, trade is extremely important to the development process. Because once countries accelerate their growth substantially, even with the best efforts of their

agricultural sector, they cannot keep up with the domestic growth in demand. This is true at least as long as their low-income consumers are spending 60 percent to 80 percent of increments to income on agricultural commodities. Thus trade is needed to facilitate imports of basic food staples including cereals and vegetable oils into developing countries. Of course they must be able to export in order to pay for those commodities.

Further, if developing countries are to grow rapidly, they must spread their own capital resources across a high proportion of their labor force. That means they cannot concentrate on very capital-intensive industries like steel, petrochemicals, fertilizer and so on. They must import those capital-intensive goods and services. And again, they must be able to export something to pay for those imports.

Agriculture, itself, can have an important role in these trade areas. On one hand, there will be a growing tendency in developing countries to import more of their basic food staples. On the other hand, they will have a comparative advantage in exporting some of the labor-intensive agricultural commodities like fruit, vegetables and certain types of livestock commodities.

Foreign assistance can play an important role in these trade processes by helping build the institutional capacity to analyze trade problems. Understaffed developing country governments do not always act responsively and sensibly in terms of their long-term self-interest in the international arena.

AID can also help develop the institutional facilities for marketing and processing the types of agricultural commodities developing countries can best trade for the things they need.

Stability of Agricultural Supplies

Food production and food prices have become increasingly unstable over the last few decades. The instability could lie in part with climate change, but it may also be partly technologically based. I mean in the sense that in developing countries the increasing input dependence of new technologies has meant that fluctuating and inappropriate government policies with regard to those inputs may greatly add to the instability of production growth. It is also generally true that new technologies give a bigger response to good weather than poor weather, thus, increasing fluctuations from changes in weather.

On top of increasing instability of production is an increase price instability arising on the one hand from European Community policies which in a sense export their instability in production, and on the other hand from the gradual withdrawal of the United States as the storer and supplier of last resort.

This increasing instability has important implications.

First, it has an extraordinary impact on the poor. When supplies are reduced, most of the adjustment in consumption is made by the very poor people. The adjustment, of course, occurs through rising prices. With a given increase in the price of food, the rich reduce their consumption by less than one-tenth as much as do the poor. Those who are most deprived in the first place must make most of the adjustment to instability.

In a world of great instability in prices, countries are very reluctant to follow strategies that emphasize high levels of employment because that brings the poor more into the political process, creating difficulties when fluctuations are downward.

The United States has a self-interest in encouraging developing countries to follow more employment-expansive policies; hence it is useful to "market development" for United States' food exporters to seek greater stabilization in the world cereals markets. The International Monetary Fund cereal facility can be very helpful in this regard. It does not stabilize prices or supplies but does provide poor countries with more ready access to those supplies through concessionary borrowing from the IMF. This facility is grossly imperfect at the present time, explaining why few countries make use of it. It should be improved and seen as something that is very separate from other aspects of trade stabilization.

AID foreign assistance can also help countries to develop a capacity to analyze their instability problems and to develop policies which will increase their stabilization at home either through use of the IMF facility or other measures, including stocking policies.

Finally, and very much related to the previous point, national governments need to develop policies to deal with problems of instability.

Conclusions

I have indicated two major opportunities arising in the 1990s: To abolish hunger and to greatly reduce the cost of production in agriculture in developing countries.

I have indicated two problem areas: Instability and trade. In each, I have indicated how the evolving capacities of U.S. foreign assistance can plug into those processes in a constructive way.

As we move out of the turbulent and in many ways unpleasant 1980s, with structural adjustment fairly well under our belts and with the observation of the substantial number of developing countries that have now returned to 7 percent to 9 percent growth, we can have a vision of growth spreading to others and even to the very large developing countries, providing the prosperity in which all can share.

This is a vision which should not be allowed to escape.

A FOREIGN AID PROGRAM FOR THE 1990s: AN AID PERSPECTIVE

Alan Woods*

BIFAD is an important part of the process that AID and the interested community at large, is undertaking in reexamining the Agency's role and direction. The university community has made a truly outstanding contribution to AID programs since the Agency was established in 1961, and indeed to the numerous predecessor agencies of AID.

AID recently completed an exhaustive examination of our assistance to agricultural universities in the developing world. That analysis clearly indicates the success that these programs have had. Some of the outstanding examples include India, the Philippines, Indonesia, Brazil and Nigeria. There were a number of other countries, such as Malawi and Kenya, where, although the processes had not been completed, a good start had been made.

As we look forward to the 1990s, we want to continue to build upon this excellent demonstration of accomplishment and the strong working relationship established in the past.

One of the critical questions is:

What is the world going to look like in the 1990s? What environment or setting will we be operating in?

1) Political relationships in the world are changing.

Afghanistan is an example of one area where changes are taking place. We are beginning to see negotiations starting on Cambodia that may well presage a change in attitude towards all of Southeast Asia.

Developments in Angola and Namibia are particularly encouraging. We get a sense that this time people are serious about trying to put that problem to rest. We may soon see a free and independent Namibia; and we may see Angola in the near-term turn its attention toward development and rebuilding that long war-torn economy.

These are very encouraging developments. They will open some tremendous opportunities for us on the development scene.

In addition, we see a lot of individual countries moving toward greater democracy and greater participation of the population. This has occurred in many countries in Latin America, places where people did not think it would happen.

- - -

Delivered by Alexander R. Love, AID/Counselor to the Agency

Great credit goes to this Administration for that accomplishment in the last eight years. It clearly is taking place in the Philippines. Although much needs to be done to build on the political change, the change has taken place.

Even Burma, which has been subdued and out of the mainstream for so many years seems to be on the verge of going through such a change itself.

With individual countries, political change will spell out opportunities for new growth and increased development in the 1990s. This will impact to some degree on our country concentrations. We can expect some opportunities for redistribution of the limited financial resources.

It is important to keep this in the background as we take a look at the individual countries.

2) The world itself has changed much since AID was established 25 years ago. This has been emphasized in both of the earlier talks today.

The United States is no longer the sole dominant figure in development assistance. There is some debate about the statistics, but, clearly, we are now seeing Japan emerging as the largest individual donor in the world. This is a radical change in the whole development scenario. It is something we are going to have to think about, and something the Japanese are going to have to think about in the coming years.

While the U. S. government is still a large donor in terms of its individual contribution, we have dropped to next to last of the developed countries in terms of our per capita contribution, as a percentage of our gross national product. That is not to say our country is not giving substantially, but we have slipped substantially from the kinds of levels we had in the early days.

In the changed profile of the developed world, the western European countries have also moved into a greater role of predominance in resource transfer. We have also seen new industrial countries such as Korea, Thailand, Hong Kong, Singapore and Brazil move in to play a greater role in the world economy.

In the last few years, China has begun to move more aggressively toward integrating itself into the world economy. Over the coming years, China will make a profound effect on the world scene with respect to markets and economic relationships.

Those countries that are still categorized "developing countries"--such as Thailand, India, Indonesia--have moved substantially along the development continuum over the last 25 years.

Other countries have not moved that way. Many of these countries are on the continent of Africa. They have remained static or in some cases have slipped back in terms of per capita growth. A number of countries in Latin America and some in south Asia have also not progressed. It is important to remember that we are looking at a much more differentiated group of countries than in the 1960s. In 1960, there was an much more similarity in income levels.

While I highlight Africa as probably having most of the countries that have not progressed, there are still large numbers of people who are very poor in the countries of south Asia, in India, Bangladesh and Pakistan, while the countries themselves have done better.

So we are not talking about just rich and poor countries, we are also talking about reaching the poor populations in some of the countries that are doing better.

A lot of debate is still going on in the development community about which is the target--poor countries or poor people? The answer is that we have to worry about both of them.

3) AID levels of funding have become a more static factor.

Levels of funding are probably going to remain static, or as Congressman Hamilton indicated, they might even slip.

4) World trade has become an increasingly important part of the picture.

In addition to trade, in some countries we are seeing that the financial flows themselves--such as investment banking transactions and debt repayments--becoming even more important than trade.

We have to stop and realize that AID's resources and role as a donor represent a different order of magnitude and a different order of relevance than they may have had in 1961. I hope we can grapple with that issue.

As for the factors that will impact on the 1990s, I can list the following:

1) The most important from AID's point of view is the continuing extent of the demographic changes throughout the world.

It has taken many years for the world's population to reach its first billion. It took more than a century for it to grow from one billion to two billion. It has taken only something like 13 years for it to rise from four billion to five billion. It will reach six billion by the end of this century, and 90 percent of these people will live in the Third World.

As we look into the 1990s, we are going to be looking at a population in these countries of one billion more poor people than we have today.

As this population has grown, it has also become more urban. You may not sense that yet because most of the cities that are growing most rapidly in the world are not in America or in Europe. They are in the developing countries.

In 1950, only 10 cities in the world had populations of five million or more. These included New York, London, Tokyo, Paris and Beijing.

In the year 2000, there will be close to 50 cities of that size. Each of these cities may have populations greater than many states in America. Mexico City will have a population of over 26 million people. It will be the largest city in the world.

These transformations in terms of population growth and urbanization are well underway. These demographic changes also mean a greater demand for increased food production from diminishing land resources.

AID and the universities have traditionally worked most closely in this area. We will need to redouble our efforts in the coming decade if we are to avoid recurring food shortages and, in some cases, starvation in the developing world.

2) The environment will be an even more dominant theme in development in the 1990s.

The problem is worldwide in scope. While specific environmental issues, such as tropical forests, biodiversity and river basin development have made the headlines, the real broad-based environmental challenge is in the area of agriculture and land use management. It is the over-use of scarce resources that is contributing to deforestation and desertification in many parts of the world.

In the poor countries of the world, the population pressure of the poor reaching to take care of themselves is the major factor contributing to degradation.

This environmental degradation is already a major factor contributing to diminishing per capita food supply. It is a major threat to the world population.

In looking at the African drought during 1982 and 1985, which hit 24 countries throughout the north of Africa and some in southern Africa, one has to be struck by the degrading nature of the land that these people were living on. The growing desertification and deforestation throughout the Sahel had a tremendous impact on reducing the productivity of the soil and left the people there extremely vulnerable to weather change.

Addressing these growing concerns with the environment is, again, an area where the universities can play a key role. A recent effort by BIFAD working with the environmental community to develop a strategy on sustainable agriculture is an excellent example of how we can work together to address these problems. We hope the Congress here in the next two days will help us identify other areas where we can work jointly on new strategy thrusts for the coming decade.

3) Scientific and technological advances are merging rapidly in every field. Super-conductivity that provides a faster, more efficient way to pass electricity from generators to end-use points is just one example. Medicine is using biotechnology to create new diagnostic techniques and new vaccines and medicines.

In agriculture, we are racing with colleagues in Europe and Japan to use biotechnology to produce higher yielding plant varieties, to improve productivity of plants and soils, and to increase nitrogen fixation.

Here again, the universities have long been on the cutting edge of these technological innovations. It may be that breakthroughs in biotechnology will be the critical factor in helping us reassure and maintain a balance between population and food supply.

4) Economics will determine whether or not we will be better off in the future.

In America continued economic growth and progress at the individual level depend on staying competitive. That means being innovative and maintaining our 40-year commitment to free and open trade.

It means keeping taxes and inflation in our own economy under control, and problems here at home will not impact negatively on the Third World.

It is also important that we return to the concept of interdependence. Indeed, we are more interdependent today than we were 25 years ago. We all depend to some degree on trade for goods and services.

That is why the recession of the 1980s sent economic shocks around the world. That is why the economic performance of other countries matters to us. If they have poor economic growth, heavy debts and serious difficulties with their external balance of payments, they do not constitute the market for us that they potentially can.

American farmers plant their crops with the expectation they will be able to sell roughly 25 percent of their product overseas.

In addition, we calculate that the developing countries today are the fastest growing market for American exports generally, not just in agriculture. They currently account for perhaps as much as 40 percent of our exports. This growing market contributes substantially to employment in the United States each year, a fact sometimes overlooked by the people who look at employment in general.

The economic performance of these other countries, therefore, should be a concern to all of us. Not just for commercial reasons but for other reasons as well. As often as not, economic failure in these countries results in human suffering. The linkage between economic growth and achieving basic human needs is direct.

One of the problems with a lot of the discussion in development in the 1970s was the attempt to de-link the basic human needs concerns and to develop direct action programs. We were not always successful because we have to remember that we are not going to achieve or maintain the basic human needs objectives unless we maintain a growth objective also.

While we talk a lot about success stories in the developing world--Taiwan, Korea, Brazil--and we should be proud of the contributions we have made to these countries--the truth is that economic failures have been a fact in many of the developing countries.

In 35 of the poorest countries of the world, the average per capita growth rate for the past 30 years has been 0.4 percent--just about zero. Carry this percentage forward, and it means that between 1988 and 2050, individual incomes would rise by only about \$66 in those countries.

If we do not do something to get a handle on the growth end of the equation, millions of people are going to continue to live in abject poverty and others will be subject to starvation and possibly death.

That is not acceptable. If these countries stagnate while America, Europe and Japan grow, the gap between us certainly will not close but will get bigger. It will get a lot bigger. Such circumstances demand our attention, both for humanitarian reasons and because they are breeding grounds for political unrest.

With that said, let us turn our attention to considerations for programs in the 1990s, programs that reflect AID's concerns and the special capabilities of U. S. universities. I will discuss some general perspectives on AID and the substantial opportunities that we see for the university community.

First, it is unlikely that official aid levels will increase substantially during the 1990s. This will certainly be true for the United States, and I believe it will be true generally for

other bilateral donors as well, although Japan will increasingly raise its individual country level.

The United States, therefore, will continue to become a relatively smaller donor on the international scene.

In response to this, we must be increasingly selective and work-focused with our programs. Our objectives must be clear. We must be responsive to the specific needs of the individual countries, and in some cases the programs must be regionally focused in terms of their direction.

We must also continue to reexamine the comparative advantages that the United States has vis-a-vis the other donors, both bilateral and multi-lateral. So many of them are involved now that there is a tendency to parcel out programs without examining what we could each do better.

The United States has some definite, specific advantages over some of the other donors. One of these is the university community itself. It has a strong record of strong emphasis on development-oriented research; the development of human resource capacity; and the transferring of scientific and technological information to the Third World.

These I think are the basic guts of what we are here to talk about today and what I think the universities can help us carve out in terms of trying to shape our strategy for the 1990s.

Within AID, we must reexamine not only the types of programs that we will be doing but how we do business. We feel strongly that our real competitive advantage rests with our strong overseas missions. I was certainly pleased to hear Congressman Hamilton reaffirm that in his comments. Whatever changes we may effect in the establishment, I suspect we will maintain the strength of these overseas missions.

Time has shown that the United States is unique in the strength of its overseas establishments. This allows us to play an extremely strong and influential catalytic role with the host countries, the other bilateral donors, and multi-lateral institutions. It is part of our ability of maintaining the leadership role that Mellor talked about this morning.

As I have noted, the developing countries have become more differentiated in the past 25 years. Continents such as Africa still demand a basic investment in agricultural institutions, research capacity, human resource development, and basic infrastructure, something that I think this Agency has almost forgotten about. But it is crucial. It is important that you as a university community, particularly in Africa, but also elsewhere in the world, keep us focused on the importance of these building blocks as long-term objectives.

While we have made much progress in Asia and in other parts of Latin America, there is still work to be done, but a particular job to be done.

We also need to look to the countries that are on the advanced end of the spectrum in the developing world--India and Thailand are two of them--stressing, as did Congressman Hamilton, our concern about developing a strategy for advanced developing countries. It is in these advanced countries that we need to carve out a more sophisticated relationship that will establish a basis for long-term technical exchanges, trade relations, and so on--something that will build on the sophistication and the market potential that now exists in these countries.

In the past, as Congressman Hamilton indicated, we have frequently reached a point where we have decided these countries have qualified to "graduate." We have chopped off our relationships and in many cases broken some important linkages that had been established. Many of those linkages were established between your universities and universities in the Third World. The cutoff has left you without ways to keep these linkages open. This has done a great disservice to the United States and to the developing countries in turn.

In all these countries, we need to return our focus to the goal of restoring and maintaining economic growth. That was part of the main thrust of Mellor's talk. Without continuing growth, the poverty objectives to improve health, increase education, expand employment opportunities for the growing population base will never be achieved. If they are achieved momentarily, they will not be maintained over the long run.

We are still sorting through this rethinking process. BIFAD's symposium today and tomorrow is part of that.

What does all this mean for the university community?

1) It means that you must recognize that AID's financial resource base will not be growing. The limited resources will also be subject to increasingly competitive demands. The constraints referred to by Congressman Hamilton are real. We have discussed this with BIFAD many times. Earmarks will be in place, and the effort to try and have this Agency, with its shrinking resource base, do everything for everybody, everywhere simply will not work.

So we have got to focus on developing approaches that are more cost-effective, that are more selective, and that will give us a greater return on the limited resources we have available.

You have got to help us in this process. The universities can play a continuing role in the areas where you have excelled in the past--developing the university institutional capacity; contributing to research needs; and continuing to work on the critical human resource base. I would hope that the emergence of

some of the opportunities in biotechnology would help us accelerate the research agenda because we have some real challenges facing us, particularly in the marginal lands area.

The environment is one of the issues where we are going to see increasing attention during the 1990s. It is going to emerge as a major plank in probably any development strategy, whether it comes out of Congress, or this Administration, or Michigan State, or wherever.

The environmental issue is not a new issue. It is one that we have faced through the history of development. But it is an issue that is moving to center stage in our relations with the Third World and in our relations with Congress and the constituency here in the United States.

We must give the environment more attention. Your effort on sustainable agriculture is a step in the right direction. I am hoping that together--you, the environmental community and the Agency can work effectively toward implementation of this strategy. I emphasize again that agriculture and land use issues are, in effect, driving some of the environmental concerns in the Third World.

At the far end of the spectrum, there are as I stated new and different development challenges in the advanced developing countries. A recently completed study in India shows that there are now opportunities for the university community to work with the Indians to launch a new generation of development of these universities at a higher level of sophistication in agriculture than they had in the past.

This also means thinking of new types of relationships. India is frequently held up as an example of what we should achieve elsewhere in the world. As we begin to look at that model, the Indians are beginning to look at a different model for their own country and saying, "Fine, we want to move on to a different type of relationship."

That discussion is now going on between the Indians, our AID mission and the university community. It is important you focus on the issue.

But the real challenge of the advanced developing country issue is one of establishing an enduring, long-term partnership with the scientific and university communities in the United States and their counterparts in the advanced developing countries. India and Thailand are used as examples because they are two that we are working hard on. But they are only examples of a number of those that we feel are appropriate for this focus throughout the world. I hope that you will look at the ADC issue, as we refer to it, as one particular target.

We have come a long way in the last 25 years. Substantial progress has been made in many parts of the developing world.

The Agency, the university community and the donors at large should take great pride in the progress we have made.

In some countries, however, progress has been minimal or nonexistent. A deep-seated reexamination process is now going on. The United States will be electing a new President. This country is already in the process of examining and developing new strategies for development during the next decade.

Other countries in the developed world, such as Japan and the European community, have begun to shoulder an increasing proportion of the development responsibility. As I have noted, trade, private financial flows, will likely overshadow traditional AID transfers during this coming decade.

The debt problem will continue to be a major problem in certain parts of the developing world. It will have to be addressed.

Growth in the developing countries will continue to depend on the development of agriculture. If we do not get back to basics in the agricultural sector, we will not achieve the overall target of growth for these developing countries.

It is here that the partnership, the challenge, and the opportunity of the Title XII universities and AID exist.

QUESTIONS AND DISCUSSION

Paul Findley, Moderator

Question:

In Africa, we promote the achievement of food-self-sufficiency. Yet in countries like Taiwan we have achieved a level of development, and they are importing up to 60 percent of their needs. What will you advocate in the next decades? The achievement of growth regardless of self-sufficiency?

John Mellor, Director, International Food Policy Research Institute:

We have a tough problem here. I am saying on the one hand that in the early stages, at least for a few decades in the growth process, agriculture has to be the basic engine of growth. On the other hand I am saying to American farmers that there is a rapidly growing market out there for your exports in agricultural commodities.

How do you put those two together?

One has to recognize that even with the best we can do in technology, it is awfully hard to get the growth rate on basic food staples up beyond about 3 percent a year for a sustained period of time. Indonesia got up to 4 percent or 5 percent for a short period, but that was making up for heavy cash development early on.

What one should be after in a developing country is self-reliance. What you want is domestic demand for food to move as fast as the best you can provide from within your own agriculture, and then a little faster. So that you are making employment and dealing with the poverty problem even faster than you can support from a vigorous, rapidly-growing agriculture. For that, you import.

That is why there is this complementarity with the interests of American farmers--though not all American farmers. Some are going to have to face up to stiff competition from developing countries. Fruits and vegetables are an obvious example. But it is important to see that markets are being made while agriculture in those developing countries is also being helped.

If it were not for the peculiarity of very rapid growth and demand in very poor countries, this would not happen. We are talking about countries where poor people spend 60 percent, 70 percent, 80 percent of their income on basic staples. Once a country becomes rich, like western Europe, pushing up the incomes does not get any more growth in demand for basic food staples.

The other thing you have to watch in Africa is a lot of rural Africans can make a lot more money producing certain types of export commodities. They may want to emphasize those, not to the exclusion of food, but perhaps to get ahead somewhat and import some of the food.

Kenya, for example, which does better on basic food staple production growth rate than most African countries, has had very rapid growth in cereal imports because they have done very well in smallholder tea and coffee and generated real prosperity for those growers.

I was told by most of the foreign aid donors: "Don't do tea and coffee. Concentrate on food." Fortunately, Kenya did both. And they import some food in addition.

Question:

You made a point about food aid as an income transfer and its potential. How much capacity is there for us to use food aid in these human capital developments? Can you give some examples and the bottlenecks you may see?

Mellor:

I would like to see another 20 million tons of food aid moved out; but not next week. If we could only see that when we build massive rural infrastructure all over the developing world and get agriculture moving through technological change; and get all the processes of growth and employment going, the food market would double and triple as a commercial market 10 or 15 years down the road. If we could only see this, we would be a lot more eager about it. Then we would start talking about the things that are necessary to be able to move both kinds of food aid.

You know what those are. You must have a long-term program with some stability in it so that developing countries won't just displace some other exporter's food with the food aid. They are not supposed to do that, but what are you supposed to do? Food aid is here today, gone tomorrow. It disappeared in the middle 1970s. You had better not build a major rural development program on food aid.

You have to build human capital; you have to build rural growth. Both have a tremendous human impact. I am talking something sensible that has to be seen in a sensible perspective. You have to build institutional infrastructure; it makes a great commercial market.

William Lavery, BIFAD Chairman:

You have emphasized readiness for the future, technology, rural infrastructure. Where do you place emergency family planning?

Mellor:

There is no question that from an environmental and growth view, anything that can be done to slow down the population growth in developing countries will make a tremendous contribution. We should be working with the countries to help in that process, and we have done a great deal in the past.

We obviously have an internal political problem as to where we stand on some very complex sub-aspects of that issue. We need to try to wrestle with that problem and see if we can't resolve it satisfactorily.

Most developing countries recognize the importance of this issue. It is fortunate that the kind of development processes that we think ought to occur--broad-based programs with massive numbers of people participating in rising incomes--do bring down birth rates fairly rapidly.

It has done quite a lot in Asia already. In Africa, we have lost a substantial period of time because of misunderstandings about the size of the land resources and whether we can still expand on that, and so on. But we have seen countries like Kenya beginning to take clear positions, and we are beginning to see some progress.

Let us not lose hope that even if we have some difficulties on the family planning side we can make progress on the other fronts, and they in turn will cut back on the population growth rate somewhat.

Findley:

Congressman Hamilton, what is your estimate of the chances of getting away from the heavy earmarking of foreign aid projects?

Hamilton:

I offered an amendment to the Foreign Assistance bill last year in Committee to abolish all earmarking. My persuasive powers were such that I got one vote, which was my own.

I think there is a chance, politically speaking, of getting a bill without earmarks except for the big two: Israel and Egypt. So there is a chance--with that major limitation. I

think we may have to work for that because even that would give us more flexibility than we now have. From my standpoint, I will vote today as I voted in the past for no earmarkings at all.

Question:

We at AID are frustrated by some of the special interests that result in these restrictions. We are sometimes put in a position where we cannot be involved in projects that would enhance the self-sustainability of developing countries. The result is a situation where aid is very often a continuing subsidy to them. At the same time, it is a subsidy to U. S. special interests. What is your reaction?

Hamilton:

My reaction is one of understanding. I think what you say is often true. In defense of the Congress, I want to point out that not all special interests assert themselves through the Congress. I have seen special interest legislation come through the executive branch as well.

You want to keep this in mind, too: It is a political process out there. You would not have an AID program if you did not satisfy a number of so-called special-interest groups. So you have to work with those. Those of us in the Congress and in the executive branch have to try to focus as much as we can on the national or broad interest.

It is not easily done. The final task for any politician in Congress is to get the 218 votes you need in the House. And keep in mind this program does not exactly go through on a landslide vote. I have seen many a vote on foreign aid where we win it by two or three votes at the last minute only with some arm-twisting from the President, and from other special interest groups, if you will.

Nyle Brady, AID/Senior Assistant Administrator for Science and Technology:

Congressman Hamilton, you mentioned bringing science and technology to bear on development, but since technology creation and development take a long time, it is under continued competition with short-term issues. After all, congressmen have two-year terms and things have to move.

What steps are being taken as part of the Task Force's efforts to include these longer-term issues involving science and technology?

Hamilton:

I am very sympathetic to your observation and remarks. The major criticism I would make of the Congress on foreign assistance relates less to the special interests and more to the short-term perspective that we have.

In many, many ways we have moved out of the development business in this country. We are not nearly as much in the business as most people think because so many of our resources today go into security, which we all recognize is an important aspect of foreign aid, and into cash transfers and budget support for nations where we have political rationales for acting.

A good example of that today is El Salvador. We are putting huge amounts of money into El Salvador. That money goes directly into the budget of the El Salvadoran government. It is spent for all kinds of things, but not by any reasonable definition is it spent for long-term development.

I hope that from this Task Force and from other efforts, this symposium and others, there will be a strong emphasis on and urging of the United States to get back to some of the original rationales for the program--long-term development. It is in our national interest. We are good at it. We have the expertise for it. We have marvelous people in universities and AID. I just hope we can back to it and begin to put more resources there, and understand that in the long-term it is much, much more important for the national interests of the United States.

It is hard to prevail. You have someone come in with an amendment today that may connect in some way, direct or indirect, with drugs, and that amendment is going to fly through because of the mood of the day.

Your comment is on target and I want to be supportive of it.

Floyd Williams, Winrock International:

We heard from Dr. Mellor a reaffirmation of the importance of the flow of technology through the development process.

The development agencies, not only AID but the banks, have been actively involved in the development of national research capabilities for about 15 years now.

I have a concern about the sustainability of that interest on the part of the national leaders in the developing countries and on the part of the donors, when this task is far from finished in most countries--even in Asia, and certainly only beginning in Africa.

I would like to be assured that my fears are in fact groundless.

Mellor:

Your fears obviously are not groundless; they are being realized to some extent.

I do a lot of complaining about the inefficiency of foreign assistance; I make critical remarks about AID. So you begin to get the impression that it is the foreign assistance donors that determine whether development is going to occur or not.

We know that is not true. The real issue is when and in what way are the developing countries going to get grabbed by this.

I don't think there is any slackening in national support for agricultural research in India these days. Farmer lobbies are developed and that is putting a lot of muscle behind moving the process along.

We have to get back to recognizing that these institutions take a long time to build. Whether they get built or not depends on the countries. We ought to be ready to respond. We ought to be trying to do it. A lot of very important countries need this assistance over 15 or 30 or 40 years, and we are not there to respond.

I hope that out of this rather extreme tension we have had recently between foreign aid technical assistance to developing countries and commodity groups in this country will come a depth of understanding that in agricultural exports you win a lot more than you lose if you are getting the processes going.

The farm lobbies ought to be keeping an eye on this and keeping some consistency in this technical assistance. We should not be counting on good-hearted urban congressmen to provide the real backing for this kind of thing.

Why isn't the farm lobby out there? The reason is that it is too complicated, particularly if the farm lobby is not a commodity organization.

So we have a selling job to do there. I think that is happening. Even the southern soybean growers are beginning to recognize that there is a big market out there and it is very complicated how to go about developing that market. Part of the market development process is helping country A do a better job of growing soybeans while countries C, D and E are doing something else--and buying an awful lot of soybeans.

To put it really briefly, the national lobbies have to be built up. They need some success to do that. We have had it pretty much in Asia.

Then, we have to be ready to respond. We must have a little better idea where our self-interest is in that process.

Ray Love, AID/Counselor to the Agency:

I share the feeling that your concern is not totally unfounded. There are many factors. I urge that we touch on the responsibility of those countries, which is one of the problems.

Clearly in the last few years, we have needed a better dialogue with the agricultural community in the United States. We feel that we are being leaned on a bit to be less aggressive in supporting agriculture in the developing countries. It does not help in achieving the objective you are talking about.

Beyond that, you get back to the complex problems Congressman Hamilton was reflecting in the broad range of issues he talked about--a limited resource base; a directive to tell us to do everything everywhere; 90 percent of our Economic Security Funds and a substantial amount of our Development Assistance effectively earmarked by various devices.

You are looking at an Agency that is torn in many, many different directions. Part of the sorting-out process is to go back and take a look at the long-term priorities. Is this an area where we still feel we have a comparative advantage? Is this an area that should be one of the priority thrusts of our strategy in the 1990s? If so, let's make sure it gets laid out and put into the agenda as part of what we should be doing.

As long as we have too many claimants trying to do everything everywhere, the pressure is going to be toward some of the shorter-term needs rather than sticking with the long-term processes required to do the job.

There is no easy answer. But we have the opportunity in the next six months to a year of really rethinking the development assistance program. Part of the issue is taking problems like this, deciding what we want to do, and laying them out as a basic plank in our long-term strategy and deciding whether to commit ourselves to do it, what that commitment means and getting agreement between ourselves and the Congress. Otherwise, it won't happen.

Gerald Thomas, New Mexico State University:

Some of the demographers indicate that population growth will slow as per capita income goes up. But if we consider the comment that we are looking at only a \$66 increase in per capita income in Third World countries over a large number of years, are our projections on demographics wrong? What can we do to raise that per capita income and impact more directly on population growth?

Love:

I think two things. In looking at the countries that have done well in terms of their economic growth, we feel there is a relationship between economic growth and family decisions to cut back. Economic growth itself seems over time to build a personal demand for smaller families.

It seems to me in the group of countries that are in such bad shape, we have got to push income growth into the equation so these countries begin to show some progress.

At the same time, we are working with them on direct action programs in family planning.

I think, over time, if growth begins to demonstrate itself, some of the direct causal effects between per capita income growth and family decisions will begin to take place, as in some of the countries of Asia.

This would, of course, begin to make a rather substantial impact. I do not think it changes our strategy. Our population programs will remain as a major thrust of our program. At the same time, it adds an increasing note of urgency on the growth end of the equation. We cannot continue to work in these countries, having them stagnate, without seeing these human problems get worse and worse and worse.

Mellor:

I would like to associate myself with those comments. Because of the massiveness of foreign aid in Africa relative to GNP and so on, the donor community really did play a substantial role in botching it up. I certainly would not blame the staff in AID for that, with the kind of conditions, pressures, and fads they had to respond to. We hope it is not going to get so badly botched up in the 1990s, and the countries themselves are more sophisticated.

A lot has been going on in Africa; it is not all failures. The Ivory Coast and Kenya look pretty good by any standards. There are some others that don't look so bad, and they have been subject to very bad external shocks, more so than the Asian countries during this period, as well as some general botching up of the process.

I would like to comment on the positive side. A lot of you know me and know I like the Taiwan example. But the fact is Taiwan had a per capita income in 1955 significantly lower than that of the Philippines and of Sri Lanka. Taiwan is back to a sustained 8 percent rate of growth. That means 6 percent per capita. It means that half the population is probably doubling its income every six years, and the rest are moving up and getting ahead of the poverty line pretty rapidly.

India, because it is a fairly self-contained country and not hit so much by external shocks, has been one of the fastest growth countries over the last 10 years--averaging pretty close to 5 percent. You have a hundred million people doubling their real incomes every eight years; that is not to be sneezed at.

Even the African countries that have been having negative growth as the outcome of the processes in the 1980s have been building that capacity, at least somewhat, and that is going to improve in the 1990s.

Ralph Smucker, Michigan State University:

Dr. Mellor's point is worth underlining. If all the human resource development of the last few decades means anything, and I think all of us are convinced that it does, there ought to be a period ahead of some optimism, growth, dynamism. Some of the examples are genuine successes.

Speaker after speaker, in this and other forums, talks about the fact that we are leveled off or going down in our development assistance accounts. One would be foolish to say that next year the foreign development assistance account is going to increase. But do we really have to accept that for the next decade?

Are the problems we are dealing with of such little consequence that we cannot talk in terms of these as demanding more resources from our government? Are the success stories so weak, is our program portrayed so poorly that we cannot say we are being effective and leading to growth and alleviation of poverty and environmental concerns which are of great consequence to our future?

That kind of a tone seems too frequently lacking in our discussions of the next decade. Do we in fact have to accept a gradual diminution or even a leveling out of concern with these very significant human problems? I recognize that Gramm-Rudman and restrictions exist right now, but to accept that as being forever is a kind of defeatism that we in the development community do not have to accept.

Findley:

To reinforce those comments, I quote from a letter Warren Baker, former BIFAD member, wrote to President Reagan: "We have found that development assistance is generally not well-understood in grass-roots America particularly as it relates to our own economic well-being . . . It is the least popular item in the federal budget, and it is always under attack . . . We need to do a lot more about building a positive constituency for development assistance . . . I am wondering if perhaps we ought to enlist the private sector in some direct, aggressive, paid

advertising, especially the firms that tend to profit from foreign-aid type business."

Love:

In response, I can say, "Sure, we think the resource base we are working with is not satisfactory given the nature of the challenges."

Maybe we are being too pessimistic, too fatalistic, but with the scenario we see now, I do not see funding levels changing.

If we are going to address this issue, we will have to get at the root problems, one of which is rethinking the whole relationship; how we communicate, what our priorities are, to the point where there is a much more reinforcing consensus between Congress and the Administration on where we want to go.

That base has got to be there. One of the important components has to be a greater program of public education. We have to get out and spend more time and find more people to work with us on educating the public.

In Africa in particular, many people understood that continent even less than they understood Asia and Latin America, so it is a major development education problem.

The resources are not adequate. To change that, there has to be something different; more basic and more revolutionary than simply going up and saying we want to up our mark by 45 percent in order to hit some of these targets. It must be based on developing a much broader consensus with the Congress, with the Administration, with the American public on what we are all about and what we are going to do.

If that happens, then you have the basis for making an effort that is larger and more commensurate with what this country is capable of doing. Lacking that, I do not think you are going to see anything but what we have basically got.

Question:

Your suggestion is very good, but the universities are the ones that are going to have to spread the word about the successes AID has had and why we should build on them. Maybe there ought to be programs that can get some of these people coming here and talking about the new opportunities that can be built on.

Love:

One of the items that ought to be included as an area of focus coming out of this symposium might be the whole question of how we can all work together more effectively on the question of education.

Are we working together to get the story out to the American public on what is really happening overseas, so they have an idea what they are getting back for what they are putting in to the program?

We do not do this job very effectively even with Congress, and they are right here in the same town. Part of the problem is coming up with strategies to do that.

Mellor:

The intellectual community outside of the foreign assistance agencies has not done a good job of explaining to themselves, which they have to do before they explain it to the public. I think I am correct that polls consistently show that the American public is concerned about the massive poverty in developing countries; they are concerned about environmental issues; they are concerned about women in the developing countries.

Somehow, what we continually seem to get is coalitions of the representatives of those specific ideas getting together and, in effect, taking fairly anti-growth positions. Yet, we can say pretty flatly that you cannot deal with those special problems through redistribution in countries where those problems are vast relative to GNP. There has to be growth. Then we find that a lot of the growth we get is essentially polluting; doesn't include women in the process; doesn't seem to have any impact on poverty.

The voters must be confused by all of this. We must do a better job of intellectualizing that process and then getting it out. We are in much better shape to do that job now than we were 25 years ago. We understand these relationships much better. It is another thing that gives me a little hope about the 1990s.

One of the things we have to clarify is that when we started in foreign aid, the United States and the Soviet Union represented close to two-thirds of the world GNP. The two of us together now probably do not represent much more than a quarter of the world GNP.

It is a different world. We have to operate differently.

The world really cares much less about the difficulties between the Russians and the Americans. As the world cares less and less, we are going to care less and less.

It would seem at that point you could start talking reasonably about reallocating some of the security assistance we give:

Are we allocating the money that goes outside of the United States for American security? Is it being optimally allocated from the point of view of the kind of world we are going to live in in the 1990s?

We are probably allocating it properly for the world of the 1950s. It is even conceivable that one could make less total expenditure in that whole area, allocate it differently, and have a lot more security for the world of the 1990s.

Since I consider myself not part of the government, but someone who has been in the university for a long time, I think that as an intellectual institution we are part of the problem. We have not been nearly enough of a solution in this area and we all should get cracking, including my colleagues in my little institute.

CHALLENGES OF ELIMINATING HUNGER

Malden Nesheim and P. W. J. Harvey*

The word hunger is a powerful term that can bring a strong emotional response.

Our personal experience with hunger is generally of short duration as a sensation that drives us to seek food. Gratification with food generally gives a great deal of pleasure.

The thought that someone can experience the sensation of hunger, more intense and far more prolonged than any of our experience, creates concern and sympathy. Such emotional reactions can have powerful political consequences and may help form the strong political support in the United States for food programs such as food stamps, nutrition programs for women, infants and children (WIC), and elderly feeding programs.

Such concerns for hunger are strongly felt also on a world-wide basis for those nations and people who do not have sufficient food and who experience the pangs of hunger and its long-term consequences.

The physical consequences of not ingesting sufficient amounts of the proper kinds of food are dramatic. Death from slow starvation is a horrible fate. We have all seen large populations at the point of starvation as the famines of Ethiopia and the Sahel have been brought home to us on television, or as many of you in this audience have seen first hand.

But the vast majority of those who do not consume sufficient food do not die of immediate starvation. They may be women who give birth to small babies whose chances for survival are reduced. They may be children who cannot withstand the ravages of diarrhea or measles and who die in the first few years of life. They may be those who are blind because they do not ingest sufficient vitamin A, or cretins whose mental retardation is due to a lack of iodine. They may be children and adults who are so anemic they cannot carry out strenuous physical activity or who cannot maintain attention and concentration in school.

People who are hungry are also not as productive, so the challenge of hunger is not only a humanitarian issue but is also a concern for world economic and social development.

The challenge of dealing with the tragic human consequences that follow, at least in part, from not ingesting sufficient food is so great because the sheer numbers of people involved are so enormous.

- - -

*Readers interested in a longer version of this paper with supporting data and documentation may contact the authors.

Actual estimates of who is malnourished in the world vary widely but are uniformly large.

According to 1987 ACC/SCN estimates on the world nutrition situation in 1984-85, 27 percent of the world's children less than 5 years of age suffered from protein/energy malnutrition (PEM), which caused them to be below two standard deviations of the NCHS/WHO standards for weight derived from children of comparable age from the healthy, well-nourished populations. This was estimated to be 155 million children worldwide in 1984. UNICEF (1987) estimates that 159 million suffer from PEM.

Available data suggest that malnutrition is a greater problem in rural areas than in urban areas. Since poverty and lack of primary health care are more common in rural areas, this finding is not surprising. The massive rural-urban population shifts in many areas of the world may also be a reflection of the greater percentage of health problems in rural environments.

The World Bank in 1986 estimated that 730 million adults and children in the world (excluding China) did not have enough calories for an active working life.

Global estimates of the proportion of the world's population that is undernourished suggest that in the last 15 years the situation has improved in all regions except sub-Saharan Africa. However, when population growth is taken into account, the actual number of people affected has remained fairly constant or increased. There has been a large increase since 1970 in the number of people in sub-Saharan Africa who have inadequate diets.

There can be debate as to the relative accuracy of these estimates, but there is no doubt that a very large number of people do not consume sufficient food.

The consequences contribute significantly to mortality rates of children under 5 years of age. Only 70 percent to 75 percent of the children born in many areas of Africa survive until 5 years of age, while 97 percent of those children born in the United States survive, and 99 percent in Scandinavia, Japan and much of Western Europe.

UNICEF estimates that over 14.1 million children died in 1986 in developing countries compared to 320,000 in industrialized countries. About 18 percent of the infants born in developing countries have birth weights under 2,500 grams, which places these children at much greater risk of early death.

Deficiencies of specific nutrients are also still prevalent. Nearly 200 million people would benefit from additional iodine in their diets, preventing disfiguring goiters and overt cretinism or lesser degrees of mental retardation.

Nearly half of the world's children and women of child-bearing age shows signs of anemia, most commonly from iron deficiency. Nearly 500,000 children go blind each year from Vitamin A deficiency and 60 percent to 70 percent of them die soon after.

In all of these cases of specific nutrient deficiency, the technology for prevention is available if only it could be delivered.

As I have alluded to already, my definition of hunger and undernutrition is the actual "ingestion of insufficient amounts of appropriate food." The emphasis on "consumption" is key in this definition because it avoids the oversimplification that much of the world's nutrition problems results from insufficient production of food to provide for the world's population.

Recently, Habicht has suggested a hierarchy of factors affecting nutrition of families that is useful in considering strategies for control of malnutrition. These include:

- 1) Food availability to the family;
- 2) Food accessibility to the family;
- 3) Food accessibility within a family;
- 4) Food accessibility and utilization by the individual family member.

Although these factors are not independent of each other, they do allow a somewhat systematic examination of the constraints that limit consumption of food by households.

1) Food Availability to the Family. To be consumed, food must be available either for purchase or through their own food production activities. Much attention has been paid to this component of the food chain as it affects hunger and malnutrition.

Policies that promote the production, importation and efficient sale of food can assure the availability of food to the family. Mellor advocates an agricultural strategy of development that will increase the amount of food available within a country, and which may also influence employment and purchasing power and increase food distribution. Strategies that eliminate barriers to free movement of food, such as tariffs or monopolistic practices, may increase food availability. In times of famine, international food aid is often essential to ensure food availability.

2) Food Accessibility to the Family. Although food may be readily available, it may not be accessible to the family. Those without land may be unable to produce their own food and may have insufficient income to purchase the food. The relationship among

income, nutritional status, energy consumption, dietary diversity, and consumption of specific nutrients has been demonstrated over and over again in a variety of settings throughout the world.

The relationship between poverty and malnutrition is complex but widely accepted. The environment of poverty poses many threats to good health and nutrition. Limited food accessibility is just one of them.

Famine, the most visible outcome of hunger and lack of food consumption, rarely results solely from lack of available food. Accessibility of food declines dramatically to segments of a population during severe famine because of high food prices, decline in income, war and political turmoil.

Strategies to promote food accessibility may deal with ensuring employment to gain adequate income to purchase food, subsidizing prices of basic food crops, use of a food stamp program to provide sufficient purchasing power. Development schemes that can reduce the price of basic foods through improving efficiency of distribution and production may improve access of food to families. The problem of access to food by segments of the population may not be solved only by increasing agricultural production, but touches basic features of income distribution and equity within a society.

Concern has been expressed that events of the 1980s have reduced access to food and health care of some segments of the population in developing countries. Economic recessions and crises in foreign debt have led to macro-economic adjustments leading in turn to reduced incomes, rising food prices, reduced government expenditures on health and social programs. There is some indication that the trend to lowered infant mortality and reduced numbers of malnourished children may have reversed in several countries including Brazil, Ghana, Peru and the Philippines.

3) Food Accessibility within a Family. Families may have adequate resources to permit access to sufficient food, but this does not necessarily mean that sufficient food will be obtained, or even if obtained, be evenly distributed to family members.

Pinstrup-Andersen describes factors influencing what he terms the "desire to acquire food" by the head of the household. Spending and consumption patterns may be determined by who within the household controls income and decides on spending and consumption. Income directly or indirectly produced by women may be more likely to have immediate impact on providing basic food and health to the poor than similar income produced by men.

Distribution of food within the family is particularly important as it relates to the needs of children. Problems of within-family access to food may occur due to premature cessation of breast feeding, provision of insufficient or inappropriate supplementary food or weaning foods, and sex biases in care or feeding of children.

Intervention strategies that circumvent the barriers to within-family food distribution and the use of available income may be necessary. Strategies to deal with such problems may depend on education programs, provision of special arrangements for working, nursing mothers and their infants.

Another powerful socioeconomic correlate of improved nutritional status in children is generally the educational level of the mother. The parenting skills and nutrition knowledge that can be taught may improve access to food within the family.

4) Food Accessibility and Utilization by the Individual Family Member. The consumption, digestion and absorption of the nutrients from food is crucial to the prevention of malnutrition. When disease causes reduction in appetite, when diarrhea interferes with nutrient absorption, and when fever causes elevated energy needs, children grow more slowly and show signs of malnutrition.

The poverty environment is one with poor sanitation, contaminated drinking water, poor access to medical care, overcrowded housing and insufficient or inadequate food. Under such conditions, frequent episodes of diarrhea, respiratory infections, malaria and intestinal helminth infections flourish, often in the same child. Attacks of measles can be particularly devastating. Grant considers that repeated illnesses, such as diarrhea, measles, whooping cough and respiratory infections are the principal underlying causes of malnutrition. To this we would add parasitic infections, including malaria.

The relationship of malnutrition and infection has led to the major child survival strategy of UNICEF, involving growth monitoring, oral rehydration, promotion of breast feeding and immunization. Infection generally causes reduced appetite and desire for food. A recent National Research Council study points out that withholding food from children during infections may contribute to the growth deficit caused by bouts of diarrhea. Even though nutrient digestion and absorption are reduced during diarrhea, significant utilization of food does occur. However, food is often withheld due to misconceptions on the part of mothers and of health professions even though the child would consume some of it if it were offered.

Infection may also be involved in the appearance of specific nutrient deficiencies. Eye lesions associated with vitamin A deficiency may appear frequently following infection. Absorption of vitamin A from food may be reduced by common roundworm infection. Anemia, widely prevalent in the developing world, often results from hookworm infections which increase iron losses from the body through blood loss. Anemia may also occur from blood losses from infection with the intestinal helminth Trichuris trichiuria, from schistosomiasis, and from destruction of red blood cells by malarial infection.

Often the strategies for alleviating human malnutrition need to originate with improved primary health care. Lowered child mortality rates in much of the world can be traced to successful treatment of diarrhea through oral rehydration therapy and through successful immunization which can prevent ravages of many of the most severe childhood diseases.

It is also likely that improvements in child growth can occur due to treatment of intestinal helminth infections, and anemia can be alleviated by treatment for hookworm infection.

In the face of such a complex environment in which malnutrition flourishes, it is not surprising that strategies to deal with the enormous problem of human hunger and malnutrition worldwide have not been easy to devise or to carry out successfully.

Malnutrition has a very strong association with poverty, thriving in an environment with poor sanitation, inadequate or non-existent health care, poor and overcrowded housing, poor education, and inadequate water supply and access to information. Often the sheer magnitude of the poverty problem suggests that little can be done to improve the overall nutritional well-being of low income populations of developing nations. As Pinstrup-Andersen recently pointed out there are several common fallacies that have often led to oversimplification of the causes and solutions of malnutrition. These include:

- * Equating changes in food production with changes in nutritional status, using total food production instead of the ability of the poor to acquire food as the nutrition-related goal for action.

- * Ignoring household behavior, including the response to direct food distribution schemes, thus failing to predict substitution among sources of food and changes in intra-household food distribution.

- * Ignoring the nutrition effects of broader governmental policies such as price exchange rate and employment and income policies, although these may exceed or cancel those obtained from a narrow nutrition intervention.

- * Promotion of single solutions such as combatting diarrhea among children with insufficient access to food or expanding access to food without simultaneous treatment of diarrhea.

This complex relationship among food production, food availability and health calls out for a close collaboration among agriculture and health workers at all levels.

Unfortunately this collaboration is rare even among our own institutions that work on problems of hunger and malnutrition in developing countries. Those concerned with agricultural policy

and food production rarely intersect those in health. In our own land grant colleges, it is rare that those concerned with agricultural development deal specifically with issues related to constraints on food consumption and health along with food production.

Yet, programs aimed at improved health but with no emphasis on access to food, or programs aimed at more food production with no attention to factors influencing household consumption and health, are likely to fail.

Fortunately, there are significant programs with records of success to indicate that specific well-targeted interventions can be successful.

It is equally fallacious, however, to argue that due to the relationship of poverty with malnutrition, nothing can be done about nutritional problems without combatting all the problems of poverty at the same time.

One can argue that appropriate strategies for combatting human malnutrition should identify the constraints to the consumption of sufficient food by discrete population segments. The most limiting constraint may then be targeted programmatically for intervention. Thus, if access to a sufficient food supply is the major constraint to consumption, actions to improve such access through increased employment, subsidized food prices, and food distribution schemes may in fact improve the nutritional well-being of segments of the population.

The relatively simple procedure of using oral rehydration salts (ORS) as therapy for children with diarrhea has had some significant successes.

In Egypt a national campaign promoting ORS and continued feeding during diarrhea has had spectacular results. Within two years of beginning the campaign, more than 80 percent of mothers had used ORS when their children had diarrhea. Fewer than 1 percent had used it prior to the campaign. Stressing continued feeding through diarrhea was an important aspect of this intervention because this helps minimize the nutritional consequences of the intestinal infection.

Vitamin A deficiency is widely observed in Africa, Central and South America, and Asia. Although this deficiency is associated with blindness in over 500,000 children worldwide each year, other more subtle health effects may be even more devastating.

The work of Sommer and his colleagues at Johns Hopkins and in Indonesia have shown that children, marginally deficient in Vitamin A, are at greater risk of death than those given Vitamin A supplements. This greater risk of mortality presumably is due to increased morbidity from respiratory and intestinal infections in Vitamin-A deficient children. The treatment through the

health system has been the distribution of capsules of Vitamin A. A single dose will protect a child for up to six months. In 1985 the estimated need for Vitamin A capsules in populations at risk was 424 million capsules. Actual procurement in 1985 was about 150 million capsules, primarily distributed in India, Bangladesh, and Indonesia.

Although capsule distribution is a proven treatment for Vitamin A deficiency, this problem needs further collaborative efforts from agriculture and health to devise means of providing Vitamin A in the food system and not through a magic pill whose manufacture depends on foreign technology and a highly subsidized distribution system.

A further example of a specific targeted intervention is Chile's national health and nutrition program for pregnant women and children under 6 years of age. The principal objective of this program is to improve the health of pregnant women and preschool children. It provides free milk and milk substitutes to households, periodic health examinations, and monitors those considered at risk. It focuses on the poorest 40 percent of the population and has existed for approximately 20 years. Approximately 470,000 children are beneficiaries.

The benefits of the program have been measured in terms of increased birth weight, reduced infant mortality, and improved school performance. A cost-benefit analysis reported by Valdes concluded that the program not only helped in providing a need, but also contributed to increasing the long-term productive capacity of the poor.

Such a program did not change the basic income and poverty position of the poor, but the targeted intervention had real benefits in terms of health. The specific Chilean experience may not be transferable, especially to countries with fewer resources, but it is an example of a successful targeted program. This success is widely cited as evidence that health behaviors can be influenced in populations living in poverty.

The BIFAD and the land-grant system can do much to promote better integration of the agriculture, nutrition, and health partnership in devising successful strategies for dealing with hunger and malnutrition.

While some of these strategies may be macro and nearly global in their scope, others may reach the village level, targeting individual families.

The problem is enormous, but the alternative to providing real assistance, long-term hope, and real relief to the problems of hunger and malnutrition in the world is against our basic humanity and the long-term stability of the world.

DISCUSSANT

Carol Capps

Specific, well-targeted interventions as discussed by Nesheim, and his call for more collaborative efforts between agriculture and health are both significant points that should be underscored.

Specific, targeted interventions can make a difference.

Agriculture and health are closely related.

A third point--the nutritional effects of broad government policies, which Nesheim discussed in reference to Sub-Saharan Africa in particular--is the point and region I want to concentrate on as well.

During the 1980s, in a time of global recession, increasing debt in African countries, and falling prices for the commodities that Africa produces, there is clear and increasing evidence that malnutrition has increased; health and education spending and levels have been affected; and the overall well-being of people in African countries very adversely affected.

When we talk about nutrition issues and about hunger, we must think macro as well as micro because there is a very clear linkage between the two.

A letter I recently received from our Lutheran World Relief representative in Sudan describes the effects of debt and the economic situation in Sudan on the country and people and also on the work of Lutheran World Relief. A few sentences from this letter:

"Sudan is a graphic example of the debilitating effects of debt on a poor country. Sudan's foreign debt is estimated to be about US\$12 billion, which imposes a very heavy burden on a nation that can barely feed itself, and the consequences of this debt are reflected throughout all levels of the society.

"On the macro level, debt has created a real situation which is causing Sudan to slowly bleed. Sudan has had negative economic growth for the past five years, despite large infusions of new loans and refinancing. Debt service amounts to more than 100 percent of Sudan's foreign earnings per year.

"In addition, Sudan produces very few things local and is self-sufficient in almost no essential product or commodity. Consequently, Sudan must import almost all essentials and pay for them in scarce foreign currency.

"Few products are available in the local markets, at escalating prices. This has a tremendous impact on development activities by greatly increasing the costs of operation and procurement. It makes budgeting a very inexact, unpredictable process. Frequently, essential items such as fuel, oil, batteries, tires, spares, tools, and equipment are either nonexistent or available only at exorbitant prices.

"Government services and programs are even more severely impacted. Crippled by this local scarcity or absence of foreign exchange or foreign sources of supply in particular, essential services such as public health, agriculture, water, education, and public works are virtually nonfunctional due to the lack of all necessary products."

Over the past couple of years, communications such as this-- and a growing concern among members of the Board of both agencies about how the overall economic situation is affecting people-- have pulled us more and more into broader international economic issues, beyond development assistance, to questions of debt and adjustment.

Last year we and others were involved in getting legislation approved that relates to the World Bank and the International Development Association and their structural adjustment programs. There has been a growing criticism within the religious community we represent of structural adjustment programs perhaps offering up a medicine that is worse than the disease. Often the medicine involves devaluation and reduction of government expenditures, the result of which seems to have been--in a number of the greatest debt-burdened African countries anyway--to increase the downward economic spiral, certainly not turn it around.

I saw an article on Ghana in the Christian Science Monitor that reminded me that in a recent report of the World Bank, Ghana is called one of the "major successes." However, the headline for the article stated that in Ghana even a senior official cannot make ends meet. It described the economic downslide of Ghana during the 1980s.

Some believe the situation is about to turn around. We all hope that is the case, but so far the evidence does not seem to be there.

In terms of malnutrition, UNICEF has reported that child malnutrition increased on the order of 50 percent in Ghana during the first five years of this decade, and there have been annual increases in infant and child mortality not only in Ghana but in many other African countries.

In that context, our concern in proposing legislation last year was to put additional pressure on, and give encouragement to, the World Bank to make human welfare a more central consideration in its structural adjustment lending.

We have had some follow-up discussions this year with both World Bank and IMF officials. We are encouraged that it does seem as though the Bank and the IMF are concluding that for some of the poorest countries particularly, something different needs to be done. Some of the adjustment programs have perhaps tried to adjust too quickly. In increasing food prices and reducing food subsidies, the urban poor and the rural landless have indeed suffered. Small farmers may have benefited but other elements of the population certainly have not.

In the recent report there is a proposal to the World Bank that one consideration in structural adjustment programs might be to increase food prices more slowly and to maintain, or possibly even increase, food subsidies at least to a targeted population. Staff would be instructed to consider alternatives--in the form of tax measures such as taxes on luxuries, oil, or other items that are not quite so important to the poor population rather than reducing government expenditures or increasing prices quite as quickly.

We are hopeful that perhaps within the next year or so we will begin to see a turnaround in some of the African countries.

There is another problem that Nesheim referred to briefly: trade protectionism in our own countries as a barrier to developing countries to increase their exports.

Unfavorable terms of trade and declining commodity prices have contributed to the economic woes of developing countries. There have been some efforts in the past to try to stabilize those prices. It appears sometimes that U. S. farmers and farmers in developing countries could be on a collision course competing for export markets.

Again, I think some of those appearances do not have a basis in reality because competition is not necessarily in the same commodities. Trade is also an issue we feel needs to be looked at carefully to determine whether there are steps our own government could take that would help African countries get their economies back into a pattern of growth.

In closing, I want to reiterate that when we look at hunger at the micro level, we need also to look at the broader international level and consider issues such as trade, debt forgiveness, and other forms of debt relief. There were in fact several debt relief proposals before Congress this year. They are not going to be approved in this session, but we anticipate that next year there may be considerably more interest and activity on various debt relief proposals.

I ask you to think in the broad context as well as the micro context when you think about hunger problems.

Questions and Discussion

Jose Rodriguez, University of Puerto Rico:

Since 1954, after the approval of Public Law 480, billions of dollars of food aid have been distributed throughout the world. In spite of that, we have been unable to eliminate hunger and in some cases the problem is worse.

At the beginning of this program, the United States was using this food assistance to dispose of their excess agricultural production. Now, we know that foreign food assistance depends upon the production of farmers. In other words, it has to be planned. With the probable exception of milk products, we do not have an excess in production.

My question is: In facing the problem of hunger in the world, are we supposed to use food aid to feed school children or should we continue to use it to maintain our child program? It has been proved that the effects of malnutrition for the first three years of a child are effects for the whole life. The specific question is: Maternal/child feeding versus school feeding, which program should be given priority?

Nesheim:

Commenting on food aid, if one looks at caloric deficits in a country as a guide, the massive redistribution of food grains throughout the world becomes very, very difficult. Massive shifts of capital and tonnages of grain as the major means for solving problems of hunger and malnutrition in the developing world is probably not the right track.

The use of food aid to take care of real food availability emergencies around the world is going to continue to occur. The specific issue is what kind of a targeted program one uses: Do you promote programs of maternal and child nutrition? Do you promote school feeding programs?

It is hard to make a generic answer. There is no question that much of the problem of poor nutrition, and the intervention point that can make a difference, is in the very early stages of life.

The point I was trying to make in my talk is that supplemental feeding is not necessarily the only way that improvements can occur. My use of the school lunch was an example of a way of going around some of the constraints that might occur within a family.

Larry Saiers, AID/Bureau for Africa:

Given the great degree of interrelation and complexity, I think we need to be very careful about the whole question of structural adjustment in Africa. In the case of Ghana, incidences of childhood malnutrition increased 50 percent between 1980 and 1985. Ghana did not even begin to start a reform program until the middle of 1984. In none of the African countries have any of the reform programs begun to take any hold statistically in things like readjustment evaluation until 1986.

So the case of Ghana really proves the exact opposite--that if countries do not do anything to take care of their economic problems, you end up with exactly the kinds of problems cited.

Sudan is another example. No one in the world would claim that Sudan is following the precepts of the World Bank or the IMF. It is because they are doing very little in that area that you end up with the kinds of problems the speaker talked about.

It is becoming more and more fashionable to talk about the need to protect those being hurt by structural adjustment. This comes about partly because of the statistical leverage. We can measure things a lot better statistically in urban areas than we can in rural areas.

In the rural areas, where since 1973 when the basic human needs legislation came about and where AID was supposed to target its program, the World Bank was told to target its programs. You now have a situation where the rural areas really are doing better in Africa. They have always been underrepresented and undercounted, and the urban populations were always overrepresented and overcounted.

It is probably true that the urban populations are being made worse off and poor populations in the urban areas are made worse off, and one needs to target something for them. I do not dispute that.

But I do not want us to lose sight of the fact that the kinds of programs that are beginning to take hold in Africa have far more benefits for far more people than the more visible types that are beginning to be hurt a little bit.

As for senior officials who have trouble making ends meet in Ghana, you have a situation of hundreds of thousands of people on the government payroll who were doing nothing productive for the society and were basically a drain on society. That country needs to move those people into the productive mode so that the growth really does occur.

I am afraid there is a new cult being built up that structural adjustment really is bad for people and bad for the individual.

Cornell University now has a fairly major study to begin looking at the distributional aspects of policy adjustment. We ought not to get too glib about the relationship of structural adjustment and the negative side of things. The evidence is still very much in doubt and has got to be studied very closely without coming too quickly to an answer on the issue.

Capps:

It was not my intention to suggest that adjustment is not necessary. I think that it is necessary in a number of African countries. But the question is what kind of adjustment? I still think there is some room for criticism. In fact, in a recent report reviewing structural adjustment in 16 countries, the World Bank offers some criticism of those programs itself.

In the Ghana case, unquestionably people were suffering before adjustment began. Again, that is part of the reason for placing hunger issues in the context of debt and declining commodity prices, which are not the whole reason for the need for adjustment but have certainly exacerbated the situation and made adjustment even more necessary.

The World Bank has made a mid-course correction by instituting an additional program--PAMSCAD--specifically to address some of the problems of impact on the poor. I believe this addition to the program is significant, and one that could have very positive impact on the situation in Ghana.

Part II

Meeting the Challenges of the 90s

The Challenge of Eliminating Hunger

Malden Nesheim
Cornell University

Discussant

Carol Capps
Church World Service/Lutheran World Relief

The Challenge to Enhance Trade Through Development

Lon Cesal and Ed Rossmiller
Resources for the Future

Discussant

Orville Freeman
Agriculture Council of America

The Challenge of Achieving Sustainable Agricultural Development

Fred Hutchinson
Ohio State University

Discussants

Jeffrey Leonard
World Wildlife Fund and Conservation Foundation

Gerald Thomas
New Mexico State University

Presiding:

Leo Walsh
BIFAD; University of Wisconsin
Jean Ruley Kearns
BIFAD; University of Arizona

78a

THE CHALLENGE TO INCREASE TRADE THROUGH DEVELOPMENT
INCREASING THE COMPLEMENTARITY OF DEVELOPING COUNTRY AND
UNITED STATES ECONOMIC DEVELOPMENT AND TRADE

Lon Cesal and Ed Rossmiller*

The thesis of this paper is simple: The economic self-interest of the United States is well-served by promoting economic and trade growth in developing countries.

The relationship is straightforward. International economic assistance is a form of investment that increases the economic growth and development of foreign nations; which in turn increases their international trade; which either directly or indirectly increases U. S. welfare--although this last link is not so automatic as it once was.

Economic self-interest as a rationale for economic assistance will require that U. S. macro-economic, trade promotion, and international assistance policy instruments be considered as a coordinated set of policy instruments designed to increase U. S. welfare through increased U. S. trade.

The International Economic and Political Environment

The international development policies promoted by the United States since the end of World War II have worked. There are 97 developing countries, with over 75 percent of the world's population, that have an average rate of GNP growth 25 percent higher than the average rate of GNP growth of the developed countries.

The United States also benefited from the international development policies it helped to initiate. In 1986, its per capita GNP was 35 percent greater than the per capita GNP of the industrial market countries as a group, and employment as a result of trade with developing countries has increased.

A much greater intangible benefit to the United States is the fact that a large number of developing countries have become strong members of the international community.

- - -

*Readers interested in a longer version of this paper with supporting data and documentation may contact the authors.

Thus, the basic economic theories that guided the design and implementation of international economic development policies at the end of World War II are still valid today. Moreover, given the large differences between the developing and the developed countries in endowments of labor and capital, there are still very large welfare gains to be realized from the free flow of capital and economic goods and services across national boundaries.

Economic and Trade Growth of Developing Countries since 1965

Basically, there are two fundamental ways a country can increase the welfare of its population.

One is to increase the productivity of its labor, land and capital. This requires a shift from technologies that produce relatively small amounts of goods and services for a given stock of resources to technologies that produce relatively large amounts of those goods and services.

A second way countries increase their production of goods and services is to increase their stocks of labor, land and capital. The stock of labor at any point in time is largely predetermined. Stocks of productive land resources for most countries can be increased only by additional capital investment. To increase a country's stock of productive agricultural land requires additional investments in irrigation and drainage systems, and other forms of rural infrastructures such as roads, electrification and communications. For nonagricultural land it means additional investment in roads, streets, water, sewage, and electrification and communication facilities.

These fundamentals highlight the priority importance for developing countries to obtain or create technologies that increase the productivity of their resources and to further increase their capital investments. It is only through the increased use of productivity-increasing technologies and through such further accumulated investments in factories and equipment, office buildings, laboratories, and improved land resources that these countries can increase their per capita production of goods and services.

There is a sharp contrast between the existing and emerging labor-capital relationships that dominate the economic growth and development of the developing countries relative to those that dominate the developed countries.

Robert Lawrence, Brookings Institution, reports the developing countries accounting for 75 percent of the global labor force in 1986 but only 20 percent of global gross domestic investment (GDI). In contrast, the industrial market economies accounted for only 17 percent of the global labor force but 80 percent of global GDI.

Since the amount of capital a worker uses has a significant influence on his/her productivity, it is useful to consider these relationships on a per worker (member of the labor force) basis, as did Robert Lucas, University of Chicago, in considering the mechanics of economic development. When put in this context, the contrast is even greater. Data from the World Bank show that in 1986, GDI per worker for all developing countries was \$250, or only 6 percent of the \$4,416 per worker for the industrial market countries.

There are also large differences in the use of capital among the developing countries. For the upper middle income countries GDI per worker was nearly 20 percent of that of the industrial market countries, but for the low income countries it was less than 3 percent.

If the pre-1980 period is used as a basis for projecting what would happen to global labor-capital relationships, GDI per worker for all developing countries increases to nearly 250 percent. If the 1980-86 period is used as a basis for the projection, GDI increases only 8 percent. For some groups of developing countries the adverse effects of the recent period on their GDI are even greater. For the upper middle income countries GDI per worker actually declines.

It is important to note that while China and India account for slightly over 50 percent of the labor force of all developing countries, these are the only two countries where capital deepening is projected to be greater with the 1980-86 period as the basis of projection. There are 95 countries accounting for nearly 50 percent of the labor forces of all developing countries where the reverse is true.

It is a combination of high labor-force growth rates and reduced rates of growth in investment during the recent 1980-86 period that reduces the projected growth in GDI per worker in the developing countries. Projected labor-force growth rates for the 1985-2000 period (again, World Bank data) are nearly four times greater for all developing countries than for the industrial market countries; nearly five times greater for middle income countries.

While GDI in the developing countries grew nearly three times faster than in the industrial market countries for the 1965-80 historical period, it grew 15 percent slower for the 1980-86 period. There was an actual decline in GDI in the middle income countries during the 1980-86 period with GDI growing at a negative rate.

The recently altered economic situation of the developing countries has had a significant effect on their trade and, through their trade with the United States, probably on the United States itself.

While developing countries in 1986 accounted for over 20 percent of global merchandise trade, their trade balances shifted dramatically in the 1980s. The average annual rate of growth of developing country exports increased from 3.1 percent to 4.8 percent between the earlier 1965-80 period and the later 1980-86 period, while their rates of import growth declined from 5.5 percent to 0.5 percent.

Excluding the lower middle income and the sub-Saharan African countries, rates of export growth increased for all categories of developing countries between the early 1965-80 and later 1980-86 periods. At the same time, rates of import growth (with the exception of China and India) decreased for all categories of developing countries between the earlier and later periods.

While these results are strongly influenced by the economic restructuring that has taken place in the heavily indebted countries, there is a high correlation between GDI, GDP and import growth rates. For India and China, the GDI, GDP and import growth rates increased 98 percent, 65 percent and 167 percent respectively between the earlier 1965-80 and later 1980-86 periods. For the other developing countries, GDI, GDP and import growth rates decreased 47 percent, 62 percent and 125 percent respectively between the earlier and later periods.

The explanation for high correlation between investment, economic and import growth is well-documented and is fairly straightforward. Faced with high rates of interest and often with large debt service obligations in the 1980-86 period, developing countries decreased their domestic investment, which slowed their economic growth and decreased their imports to offset the increased debt service demands on their foreign exchange. These countries also increased their exports in order to earn more foreign exchange.

Clearly, this altered economic performance of the developing countries has affected the U. S. economy. Import-substituting sectors have encountered increased pressure from foreign imports, and exporting sectors have encountered increased competition from developing country exports.

In 1986, the developing countries accounted for about 21 percent of global trade (exports plus imports). Within this group of 97 countries, however, a much smaller number of countries, 24 upper middle income countries, accounted for 13 percent of global trade. Moreover, an even smaller number of countries--12 countries which the World Bank classifies as exporters of manufacturers--accounted for about 11 percent of the global volume of trade.

Hence in terms of their potential to enhance U. S. welfare through U. S. trade growth, there is a small but growing group of developing countries that have become especially relevant. High rates of economic growth on the part of these countries increases

export opportunities for U. S. exporting sectors, and increases competition for U. S. import substituting sectors.

Thus, to the extent that the United States is able to shift its economic activity to high-income producing export sectors, and away from low-income producing import sectors, it gains from increased trade. To the extent that it is unable to make these shifts, the United States foregoes opportunities to gain from its trade.

Economic and Trade Growth of the United States since 1965

The United States during the past 20 years has sustained its rate of growth in GDP; actually increasing it slightly from 2.8 percent during the earlier 1965-80 period to 3.1 percent during the 1980-86 period.

However, it is well known that this has been supported by an inflow of capital from other countries and a growing U. S. trade deficit. Since 1983, capital has actually flowed from the capital-scarce developing countries to the capital-abundant countries. The resulting increased financial pressures on the external accounts of the developing countries pushed them to increase their exports and decrease their imports.

This restructuring in developing country trade has undoubtedly contributed to the growing imbalance in U. S. trade. While this has been viewed unfavorably in the United States, it may have been the most enlightened U. S. policy vis-a-vis the developing world during this period, even if by default. LDCs would have suffered even greater economic adversity in the 1980-86 period if the United States had not taken their exports.

Yet, the final result is that the imbalance in U. S. trade has contributed to a loss of U. S. manufacturing jobs and increased the pressure for trade protection. The increased pressure of foreign imports on U. S. manufacturing employment has probably contributed to the decreased support for international economic assistance in the United States.

With appropriate policies the developing countries can be significant growing markets for U. S. exports. However to realize their economic and trade growth potential, and to be significant growing markets for U. S. exports, the developing countries need capital and better technologies to support the growth of their labor-intensive industry and international markets for their labor-intensive exports.

At the same time, the United States needs to invest not only in the development and expansion of its high-tech industries but in the further development and expansion of its international markets for its exports.

Basis for U. S. Development Assistance and Trade Policies in the 1990s and Beyond

The international economic policies formulated by the West following World War II supported the free flow of capital across national boundaries. The economic theory underlying this policy is sound. Abundant capital flows from the highly developed countries to the capital-scarce developing countries where it is combined with abundant labor to produce labor-intensive goods. Some of the labor-intensive goods are exported to the developed countries in exchange for the capital-intensive goods produced in the capital-abundant countries.

With the free trade of goods and services, welfare in both the developed and developing countries is increased as both export products for which they have a comparative advantage, and import products for which they have a comparative disadvantage.

While the theories that have guided international economic development since the end of World War II are still valid, today's international economic environment is very different from that which existed following World War II. As a result, additional theories to explain economic and trade growth have entered the picture and are altering our perception of how the United States gains and loses from its participation in the international economy.

A number of developed countries have become keen competitors with U. S. exporters of high-tech industrial products, and a number of developing countries now produce and export labor-intensive manufactured products in direct competition with U. S. manufacturers. As a result, some of the basic tenants of trade theory that national economies adjust to changing comparative advantages must be addressed very directly by the United States.

The self-interest of the United States takes on different dimensions today than it did immediately following World War II:

1) The basis for supporting U. S. international economic assistance is changing.

In the 1950s when U. S. international development assistance programs were implemented, there were many good reasons and no bad reasons for the United States to assist other nations with their economic growth and development. It was easy to identify and defend the self-interest of the United States. Moreover it made people feel good to know that they were helping others who were less fortunate than they.

Today it is no longer so easy to make the case. It can still be made on economic grounds, but it is complicated and difficult to explain. It is possible to argue that the net gains to the United States will be greater if the developing countries have sustained high rates of economic and trade growth than if they do not.

However, the economic and trade growth of developing nations now entails adjustments in the U. S. economy that are not painless. Some in the United States will gain and some will lose as a result of the expanded trade between the United States and the developing countries.

The United States is in a very different competitive position today than it was following World War II. It is no longer true that the developing countries export only raw materials and import their manufactured materials only from the United States. In 1986, 12 developing countries the World Bank classifies as exporters of manufacturers accounted for slightly over 10 percent of global merchandise trade. Exporters of manufactured products in these countries now compete with U. S. exporters of manufactured products.

Moreover, in contrast to the period immediately following World War II, developing countries today can import manufactured products not only from a large number of other developed countries but from a growing number of other developing countries.

The competition that U. S. exporters and import substitution industries face in international markets has become fierce and is likely to become more so as additional developing countries become significant participants in the growth of the international economy.

2) The need for economic assistance is still very great.

On humanitarian grounds it is difficult to argue that the United States does not have an obligation to help the people of the developing countries. With those countries having 77 percent of the world's population, and a per capita income that is less than 5 percent of U. S. per capita income, the need for assistance is obvious.

There are 39 developing countries, with a third of the world's population, where the gap between their per capita income and that of the industrial market countries is becoming larger. Moreover, there are 19 developing countries with declining per capita incomes. If the 20-year trends (1985-86) of these 19 countries continue, per capita income will decline \$3 each year. Clearly, given the relative wealth of the United States, there are strong humanitarian reasons for the United States to assist the developing countries.

3) The historical bases for development assistance are still valid.

A long-standing basic argument for U. S. assistance to other nations is that developing countries need additional capital to increase their rates of economic growth. Their need is for capital to build additional factories to employ their abundant

labor; to develop their transportation systems to move resources to their factories and products to their markets; and to develop communication systems to organize their economies efficiently.

The United States, with its relative abundance of capital, then benefits by producing and exporting capital-intensive high-tech products that the developing countries cannot produce but need to further economic growth.

Thus, the increased economic growth of the developing countries increases the demand for U. S. exports of high-tech products such as optic fiber communication equipment, jet aircraft and chemical products. Both the developing countries and the United States benefit through their respective competitive advantages.

Another historical argument for U. S. technical assistance is the need for increased public investment in the developing countries. Their limited capacity to raise funds, and the fact that the returns to public investments are usually widely dispersed over both recipients and time, often make it difficult for developing country governments to support public investments at efficient levels. As a result, foreign assistance is often needed to fill the gap.

The return on foreign assistance to develop public sector agricultural infrastructures is especially high. Since a large share of the labor force of developing countries is employed in agriculture, and a large share of their capital is often tied up in agricultural land, relatively small increases in agricultural resource productivity can have a significant impact on their economic growth.

Thus, foreign assistance to develop irrigation and drainage systems, agricultural research and extension facilities, and farm to market roads has received high priority in U. S. development assistance programs. The argument for public support for agricultural development in the developing countries seems just as valid as it was in the United States when it invested heavily in the development of its land-grant system of agricultural universities, in its system of inland waterways, and in its rural electrification system.

A relatively recent argument for accelerated agricultural development in the developing countries is that such development generates export markets for U. S. farmers. As Mellor has so ably pointed out, it is the rapid increases in rural incomes that accompany agricultural development that lead to demand for food and other agricultural products growing faster than the production of these products.

Since most developing countries do not have the capacity to increase rapidly their production of the ever-increasing variety of agricultural goods their populations demand, they turn to increased agricultural imports to satisfy these demands. These

increased import demands become export opportunities for U. S. farmers.

4) New bases for development assistance have emerged.

The United States increasingly stands to gain from its increased trade with developing countries. During the past 15 years a number of developing countries have become significant participants in international trade. Undoubtedly, some in the United States have gained and others have lost as the United States increased its trade with developing countries.

However, with appropriate policies, the United States stands to gain much more than it loses as it increases this trade. Net employment in the United States has increased because of U. S. trade, and a significant share--between 40 percent and 50 percent--of this trade-related employment growth is the result of trade with developing countries.

It seems highly likely that developing country trade will be an increasingly important factor in U. S. employment gains from trade. The 1.6 million jobs gained through trade in 1983 accounted for about 1 percent of the U. S. population of working age. A 1-percent increase in national employment is normally considered to be important.

Increased U. S. access to developing country export markets has been a by-product of U. S. development assistance. It may be more appropriate, however, as the United States develops its policies for the 1990s to consider increased U. S. access to developing countries as a principal objective rather than a by-product of U. S. development assistance.

The international market is no longer a take-it-or-leave-it market. The United States now sells its high-tech products in competition with those produced in other developed countries, and a number of its labor-intensive manufactured products in competition with products produced in some of the developing countries.

Moreover, developing country governments now recognize that their economies have market power, and that they are in a position to negotiate who invests and what types of investments are made in their countries. Thus, if the United States is to sustain its access to developing country markets in the 1990s, it may be essential that the scope of some U. S. development assistance programs be expanded and specifically designed to enhance both developing country economic growth and U. S. access to developing country markets.

Increased knowledge of developing country markets is also important to sustaining the competitiveness of U. S. products in international markets. Increased first-hand and up-to-date knowledge of rapidly changing developing country markets has been a windfall gain of U. S. development assistance programs also.

As with market access, it may be more appropriate as the United States moves into the 1990s to consider increased knowledge of developing country markets as a primary objective rather than a by-product of U. S. assistance programs.

The "new" theories that are increasingly used to explain trade growth argue that trade is based on the introduction of new differentiated products and more efficient production processes that give innovating firms and nations a temporary monopoly in the world market. While such temporary monopoly positions can significantly increase a country's exports while it has its temporary monopoly, sustained export growth requires a continuous stream of innovation.

But a recent body of literature on U. S. competitiveness identifies a gap between the ability of U. S. industries to design high-tech products, and the ability of U. S. enterprise to sell such products in foreign markets. The essence of the argument is that the new highly-differentiated products that are developed in the United States are not well adapted to the specific needs and preferences of producers and consumers in developing countries.

If the United States is to sustain its competitiveness in international markets of the 1990s, it will require a different level of investment in determining market needs than was required for the international market the United States dominated in the 1950s. Understanding the needs of foreign consumers and developing new technologies to meet those needs become an essential part of U. S. efforts to increase its exports of high tech capital intensive products.

This requires a first-hand working knowledge of production processes and producers and consumer needs and preferences in foreign countries. The need is for an increased level of investment in understanding the unique requirements of the developing country market, and in specifically designing products to meet the needs of this rapidly evolving export market. Hence, it may be reasonable that the scope of some U. S. development assistance programs be expanded and specifically designed to increase U. S. knowledge of developing country markets.

Exactly what form U. S. development assistance programs designed to increase U. S. access to developing markets might take is unclear.

The U. S. Overseas Private Investment Corporation (OPIC), a self-sustaining U. S. government agency, is a partial answer. OPIC promotes economic growth in developing countries by encouraging U. S. private investment in those nations. It assists U. S. investors through two principal programs: The insurance of investments against certain political risks, and the financing of such enterprises through direct loans and/or loan guarantees.

These OPIC programs do not go nearly as far as the Japanese trading companies in promoting both developing country economic growth and Japanese access to developing country markets.

The Japanese trading companies perform three primary functions: transaction intermediation; financial intermediation (or quasi-banking); and information gathering. They also perform functions such as transportation logistics (dealing with space) and warehousing (bridging time).

More recently, these companies have combined all these functions into an organizer/coordinator function that has made it possible for small- and medium-sized Japanese firms to compete as multi-nationals in the international economy. As a result, a large number of these highly innovative and aggressive firms have increased their investments in developing countries. Simultaneously, the trading companies have worked with these small- and medium-sized firms to increase Japan's trade with the developing countries.

5) Bases for expanding and refocusing development assistance in the 1990s.

Combined, the historical and new bases for development assistance generate a compelling argument for increasing and broadening the scope of U. S. development assistance in the 1990s.

On humanitarian grounds alone there is still a very large need for the traditional types of economic assistance that has dominated U. S. programs since the 1950s. With the developing countries accounting for over three-fourths of the world's population and per capita incomes that are less than 5 percent of those of the industrial market economies, the need cannot be denied. The historical bases for U. S. development assistance are just as valid today as they were in the 1950s when the United States initiated its economic assistance programs.

In addition, there are new bases for U. S. development assistance. A number of the most successful newly industrialized developing countries (NICs) have become significant participants in the international economy, and an increasing number of other developing countries (pre-NICs) are likely to follow their lead and pursue a trade-oriented development strategy.

Prudent self-interest, with the available evidence indicating that U. S. welfare is increased as a result of its trade with developing countries, suggests that the United States should have some development assistance programs that are specifically designed to increase both host country and U. S. private sector investments in these countries. They represent a potentially large and rapidly growing market for U. S. firms, and U. S. consumers can gain from importing the less expensive products exported by these countries. Through increased trade, the United States prospers as these countries prosper.

As the United States considers the relationship between its own welfare and its efforts to assist the NICs and pre-NICs with their economic development, it must confront the question of how much assistance, to whom and in what form.

Some recent developments in the theory of economic growth suggest some guidelines. After reviewing a number of empirical studies that attempted to explain why some countries have high and others have low long-term rates of economic growth, Lucas concluded that an important factor had been omitted from our received theories of economic growth. He then incorporated such a factor into the neoclassical theory of economic growth and concluded that indeed such a factor could explain why some countries have high rates of economic growth and others do not. Lucas' model emphasizes human capital accumulation through learning-by-doing.

The potential relevance of Lucas' model to U. S. development assistance policy and U. S. welfare is obvious. Developing countries with policies designed to achieve high rates of human capital accumulation, either through formal schooling or specialized learning-by-doing, would be more likely to have high rates of economic growth than countries that do not emphasize such accumulations of human capital.

It follows that if the economic growth of a developing country affects U. S. welfare through its trade growth, and if U.S. self-interest is a factor in deciding which countries receive U. S. assistance and how much assistance they receive, then some countries should receive higher levels of assistance than others.

The data on which this paper is based, as well as the results of numerous empirical studies, show a high correlation between rates of economic and trade growth. Thus, countries with high rates of economic growth could be expected to have potentially more rapidly growing export markets for U. S. producers than countries with low rates of economic growth, and thus have a larger effect on U. S. welfare.

6) Unrestricted trade and the need for adjustment assistance.

A 1986 report of the United Nation's Industrial Development Organization provides estimates by economic sectors of the net employment gains and losses of U. S. trade with the developing countries.

In 1983 the United States lost 379,000 jobs (full-time equivalent) in its apparel sectors and gained 764,000 jobs in its machinery sectors as a result of its trade with developing countries. Thus, there was a net shift of 385,000 jobs to the machinery sector. Given that wages in the machinery sector are almost double those in the apparel sector, the U. S. labor force

earned more because of U. S. trade than it would have in the advance of trade.

When the employment losses for all sectors losing employment due to imports are summed, 1,451,000 jobs were lost, and when all of the employment gains due to increased exports are summed 2,120,000 jobs were gained. Thus, there was a direct gain of 669,000 jobs in the U. S. economy in 1983 due to its trade with developing countries.

To the extent that the wages in the gaining sectors were greater than the wages in the losing sectors, the United States gained because of its increased trade. To the extent that wages in the gaining sectors may have been less than the wages in the losing sectors, the U. S. lost as a result of its trade with developing countries.

Thus, if the United States is to sustain a high rate of increase in its national welfare, it needs to facilitate the adjustment of its resources from importing sectors with low returns to exporting sectors with high resource returns.

Policies to Promote Economic and Trade Growth of the Developing Countries and the United States in the 1990s and Beyond

The overriding objective of U. S. international assistance and trade promotion policies in the 1990s should be to enhance the economic growth and development of both the United States and the developing countries.

While the increased flow of capital from the developed to the developing countries can be justified on both moral and technical grounds, it is also true that U. S. self-interest requires that its exports be competitive in international markets.

This is a very real challenge for U. S. producers. Obviously, the U. S. comparative advantage lies in exporting high-tech, capital-intensive products and importing labor-intensive products from the developing countries. But there are other highly developed countries competing for the developing country market too.

While the United States must have an R & D program that continues to develop high-tech products that will compete in the international market, U. S. business must also be able to meet the needs of the markets of developing countries. In this context, U. S. development programs that promote U. S. private investment in developing countries could be very complementary to U. S. efforts to increase its exports of high-tech, capital-intensive products to these countries.

Four types of policies are needed if the international economic assistance that is used to promote the economic growth and development of developing countries is also to enhance U. S. welfare:

1) Policies to Transfer Capital and Technologies from the Developed to the Developing Countries

The United States needs policies to reverse the existing flow of capital from the developing to the developed countries. It is impossible to defend on economic development grounds the direction of capital flows as they have been since 1983. We emphasize the need for policies to re-establish a net flow of capital to the developing countries as soon as possible.

In addition to policies that would increase the flow of official development assistance to developing countries, the United States also needs policies to promote U. S. private investment in developing countries.

Such policies are needed for two reasons: To provide additional capital to private sectors of the developing countries as a means of further accelerating their rates of economic growth and thus further expand potential export markets for U. S. exporters; and to provide U. S. industries with the knowledge of how to design and produce products for developing country markets.

Thus, development assistance policies designed to promote U.S. private investment in developing countries could be very complementary to increasing the competitiveness of its products in international markets.

2) Policies to Enhance U. S. Welfare through the Promotion of Unrestricted International Trade of Merchandise and Services

The United States needs policies that support unrestricted international trade. There are potentially very large net gains to be realized from unrestricted international trade.

There are potentially even larger gains to be realized from the economies of size that are associated with the development and marketing of new high-tech differentiated products. However, without unrestricted access to the international market, U. S. industries could find it difficult to achieve sufficient economies of size to compete in the international market. Since these types of products are developed in high-wage capital-intensive industries, their production and export complements U.S. comparative advantages with the developing countries.

Thus, policies designed to support unrestricted international trade would benefit, through their respective comparative advantages, both the United States and developing countries.

Another benefit of unrestricted international trade is its effect on economic efficiency. It is competition that leads U.S. producers and producers in other countries to produce better products at lower cost. Unrestricted international trade brings the forces of international competition to bear on producers in every country. These indirect benefits of unrestricted trade are probably much greater than the direct benefits, with consumers in all countries benefiting.

3) Adjustment Assistance Policies to Support U. S. Trade Growth

The United States needs policies that encourage its trade by assisting those who lose as a result of U. S. trade growth. Adjustments associated with trade growth are not painless. The land, labor and capital resource employed in the sectors that are being replaced have to be shifted to the sectors that are expanding because of their increased market opportunities.

The number of jobs involved in these shifts is significant, as indicated earlier. Some people find employment opportunities expanding; others find them contracting. Some groups lose their jobs and must find others. This shift in employment, which may entail a significant period of unemployment and loss of income for some, is not costless for those involved. Moreover, capital and land owners confront similar losses.

The distress of these groups, especially when it is attributed to our growing trade with developing countries, makes it difficult for U. S. policy makers to support U. S. economic assistance to other countries. Likewise, it increases the pressure on these same policy makers to erect barriers against imports in general, and developing country imports in particular.

It may be in the national interest to assist the losers to adjust rather than have them obstruct the trade and reduce the overall net gain to U. S. welfare. Clearly, such a policy would have to be based on careful analysis and rigorous national guidelines that could not be manipulated by interest groups. At the same time those who actually lose as a result of trade need their losses compensated efficiently and expeditiously.

In our judgement, the analyses needed to implement such a policy require more attention. Not only would these be useful in defense of U. S. international economic assistance policies, but they would be especially beneficial to U.S. negotiators in the GATT negotiations. An unanswered question is why there have not been more studies along these lines.

4) Policies to Enhance U. S. International Competitiveness

The United States in relative terms has an abundance of capital, science-based R & D capacities, high skilled labor, and productive agricultural land. With these relative endowments, the United States needs policies that increase its stock of

accumulated capital, further develop its R & D capacities, and increase the productivity of its labor and agricultural land.

Increasing its stock of capital requires higher rates of investment, which means policies that lead to higher rates of savings and lower rates of consumption. While higher taxes are politically unpopular, they may nevertheless be essential to further sustained increases in U. S. competitiveness.

To increase its R & D capacities, the United States needs policies to increase further both its public and private investments in basic and applied research and in the development of new products.

Increasing the productivity of U. S. labor requires increased investment in both basic education and in advanced and highly specialized subject matter.

Sustaining U. S. competitiveness when trade growth is driven largely by the rapid introduction of highly differentiated high-tech products can require a rapid redeployment of productive resources. This redeployment of resources may in turn require the retraining of highly specialized high-skilled labor in a relatively short period. Policies in both the public and private sectors to sustain such retraining are needed if the United States is to compete in the rapidly changing international market.

Supporting the continued growth in agricultural land productivity requires continued investment in agricultural research and extension, by both the private and public sectors.

With respect to U. S. producers being able to sell their products in international markets, the United States needs policies to support both its public agencies and its private sector to better understand the evolving needs of the international markets.

The challenge to the United States is to have its high-tech industries on the leading edge of developing new high-tech products, and to be able to sell these products in the highly dynamic and competitive international market. If the objective of U. S. policy is to have the most favorable effect on U. S. welfare, U. S. policies are needed to accomplish both of these objectives.

DISCUSSANT

Orville Freeman

The presentations without exception have been outstanding.

Congressman Hamilton has told us there is a setting for change and that he is disposed toward very major change. He said in effect that we need a great design; that we don't really have one; that we are living in a time of tremendously rapid change. This is a global world; an interdependent one; maybe an integrated one; and what we did yesterday isn't going to work today.

So the Foreign Affairs Committee of the House of Representatives is reaching out. Many in this room are already involved in different degrees in the review and evaluation process taking place. We ought to all be doing some very hard thinking.

Also, as we all know, it is in the first year of a presidential term that you can really make things happen. Later on it is extraordinarily difficult.

I could not help letting my mind rove a bit. It is almost 28 years to the day in December 1960, that President-elect Kennedy announced the appointment of Orville Freeman as U. S. Secretary of Agriculture. Something he said is timely to what we are discussing today. He said:

"The number one economic problem in this nation is rural America--low farm income, low farm prices, and a deteriorating countryside.

"The biggest paradox in the world is a world full of food and full of hungry people.

"There is a common solution to both problems. If those hungry people could buy, those farm prices would be good and rural America would prosper.

"I expect the Secretary of Agriculture to do something about this."

I did not sleep for two nights! And in about 11 months I was in an airplane with 15 people from the U. S. Department of Agriculture, AID, and the State Department. We went to 10 countries in Asia. We spent a couple of days in Ceylon and then in Japan for the first U. S.-Japan cabinet session.

In each country we took a look at what was going on in development and the potential for markets and how to make effective use of our food production capacity--enormous even then. The surplus situation was a very tight one. We had

completely run out of storage and even the mothballed fleet was full of grain.

How do we take this enormous productive power and use it for development to build markets so that our own agriculture and our own nation will prosper as well as the receiving country?

On our return home, we went to work to meet that challenge with a program that we used to call the "dynamic triangle," the "action triangle:" Humanitarian food relief, economic development, and commercial market-building.

That program was not the only factor but it was an important one in what happened in the 1970s. That decade, incidentally, is the only time in the history of this century when there was prosperity in rural America and full utilization of our productive capacity other than in wartime.

Why? Because there was an economic growth rate in the Third World countries of 5 percent, plus. The market was there. We were, of course, a residual supplier. But we were scratching to produce, not fussing about surpluses.

You may remember in 1972 we even embargoed the export of soybeans, something that the Japanese have never let us forget.

What we heard from John Mellor is very much on target. My experience and study over the years lead me to believe that we can use agricultural commodities effectively as a key element for economic development in Third World countries.

Since we examined that possibility 28 years ago, a lot has been learned and a lot has happened. I think it is timely to be reminded that the use of these commodities--food-for-work tied in to the building of infrastructure--can and should be a key element of our policy.

Unfortunately, we dropped off from doing that in the 1970s because we did not have any "surpluses."

What Mellor suggested, and I would certainly underscore, is that we ought to produce for development purposes and not just sit back and say, "Well we happen to have a surplus on hand; we will use it someplace around the world for development."

Instead we should plan to take advantage of that production power through longer-term programming with production for that purpose.

We would use our production power rather than idling it. We idled some 68 million acres a couple of years ago at a cost of \$15 billion instead of utilizing that enormous productive power.

We have about 40 percent overproduction capacity measured in terms of our domestic needs. We feed our people with fewer than

2 percent of our population. And we are highly competitive anywhere around the world where we can come head-to-head on major commodities.

So, with the potential of building markets in Third World countries--there will not be overproduction with a 5 percent growth rate and the Third World countries moving ahead. Actually, American agriculture is a production miracle the like of which the world has never seen, and our challenge is to try and make effective use of it.

I think the stage is set. The need for change is there. I believe the American people are going to recognize that fact. And I think we are going to have the kind of leadership from either of the presidential aspirants to point the way.

We may be coming to a period in the history of this country that can be dynamic and meaningful. It is well to take a look at it in a hard-headed, rational way. Where are the markets? Let's go out and fill them. Let's build the purchasing power. We did a pretty good job of that once. Let's do it again.

Questions and Discussion

Clifford Lewis, Tuskegee University:

Often we hear that when the U. S. private sector moves abroad, jobs are taken away from the United States. How can we best use the U. S. private sector and foreign aid to promote development without raising eyebrows about the loss of jobs?

Ed Rossmiller, Resources for the Future:

That is an important question involving the ability to look at the various sectors and determine where the loss of jobs in the United States is going to transfer to, where the new jobs will be.

If the lost jobs have lower wage rates, or if there are fewer jobs lost than jobs created, then the country gains as a whole.

In an integrated set of policies, one of those should be adjustment, and adjustment assistance if necessary in order to make the adjustments easier on those who have to bear them.

There are certain kinds of private-sector activities in developing countries that can be very beneficial to the United States.

Vernon Ruttan, University of Minnesota:

I am not very sympathetic, and am quite skeptical, of the kind of effort that we now seem to be involved in of showing that in order to do good for anybody else we have to prove that it does good for us.

Throughout most of the postwar period, right from the Marshall plan up, the rationale for foreign assistance was that we contribute to American security. Nobody has ever demonstrated that it contributed to American security. We demonstrate quite often that it has contributed to economic development.

We are straining awfully hard now to show that if we do good to others, it is going to do good to us.

I think we have established an implicit global contract with the rest of the world by the simple fact that we trade with them. What we are concerned about is some distribution of equity in the United States between Mississippi and Minnesota or between New York and Arkansas.

But if we have to sit down and show that every flow is in our favor, our clientele are not going to believe us. They think we are pulling the wool over their eyes when we say that the good we did for Brazil when Mississippi soybeans went to Brazil did not do us any harm. They don't really believe it when we say that.

I think we ought to back up and make a simpler argument: We don't want to live in a world where there is as much disparity as that which can be seen in the material presented today.

Leo Walsh, University of Wisconsin, BIFAD Board Member

Since World War II we have gone through cycles in which prices and rural economic conditions were quite good. This seemed to provide the opportunity for other nations to come in in terms of some of our commodities because the world market price had advanced. Then economic conditions turned around. Those countries that gained a foothold in markets fiercely resist losing them even though it may not be in their economic interest to maintain that foothold. They either reduce their profits or their governments subsidize the products. Although we have had the dollar decline, it is extremely hard for us to recapture the markets we had in the late 1970s and very early 1980s.

Is this a problem we have with world market and trade activity that other nations do not have?

Freeman:

What you say is absolutely true. The 1985 Export Enhancement Act was for that reason. We needed to respond and did when those markets were taken, particularly by the European community, with a degree of subsidization that would go as high as needed in order to get and keep them and totally disrupt the world farm market scene.

Out of that situation has come stronger support for the GATT negotiations (General Agreement on Tariffs and Trade) and serious consideration in this session for agricultural concerns. Agriculture has always been low man on the totem pole in GATT negotiations. This time it is up top. It should make a major difference to agriculture all over the world.

Rossmiller:

I would certainly agree in part, although the 1981 Farm Bill actually caused us to pull ourselves out of the market in the first place. But with the change in direction of our agricultural exports in the last year they are back on their way up again. A large part of that is due to some recovery in the economies of our markets overseas. I would not ascribe quite as much of the result to our Export Enhancement program as I think Freeman ascribed. One of the things we have done with the Export Enhancement program is lower world market prices without necessarily getting the volume kick that we got for other reasons.

I cannot agree more with Ruttan, but I am not convinced that the argument of humanitarianism and equity is necessarily going to work in the future. Ruttan is right, we did have a very strong political self-interest after World War II. What I was arguing is that this is no longer sufficient. About the only thing I can really see taking its place in order to get the American people behind any increase or even sustained level of development assistance overseas is economic self-interest.

THE CHALLENGE OF ACHIEVING AGRICULTURAL SUSTAINABILITY

Fred Hutchinson

First let me give you the definition of sustainable agriculture as presented in the National Research Council report of December 15, 1987:

- 1) It should maintain the long-run biological and ecological integrity of natural resources without which agricultural production cannot be increased, and possibly not sustained;
- 2) It should be viewed as part of a country's economic development strategy;
- 3) It should provide ample economic returns to farmers and farm-related industries to support essential investments in annual farm production activities;
- 4) It should contribute to the health and vitality of the rural cultures involved in the multiple aspects of food production.

Sustainability of systems, agricultural or otherwise, is measured over long periods of time, typically 100 years or more.

I do not consider the term "sustainable" to be synonymous with "low-input." In some agroecosystems certain types of farming systems can be sustained with low levels of inputs, but in many situations this is not the case. For example, production of many row crops on acid, infertile soils with low inputs can lead to much greater erosion on sloping terrain.

Many ancient civilizations employed agricultural practices that were not sustainable and ultimately passed away. Other ancient systems have survived to the present. In the tropics, forest clearance for shifting cultivation has been practiced for 3000 years in Africa, 7000 years in Latin America, and 9000 years in India. Undoubtedly these systems have evolved and not remained constant over time. We can learn much by conducting more detailed studies of them.

In the United States our agricultural systems are much younger, but even here there has been a gradual change over time, moving from the massive deforestation in the earlier years to a much stronger emphasis on land-use suitability. Federal and state programs have done much to encourage wise land use. At one time 75 percent of the land area in Vermont was cleared, whereas today it is less than 25 percent cleared.

However there are today many acres of marginal land in the United States on which soil erosion rates are intolerable. The recent Conservation Reserve Program is a move in the right direction, but it is too soon to pass final judgement on its long-term success because economic pressure may eventually destroy the intent of the program.

A relatively recent question being raised in the United States and also Europe relates to the sustainability of many conventional cropping systems that since World War II have evolved into high-input monoculture systems. Crosson and Ostrov have stated that many farmers decide whether to stay with conventional practices or change to alternative systems on the basis of economics. Since they receive no remuneration for the off-site benefits achieved by alternative systems, they usually decide to remain conventional.

Environmental degradation in the developing countries tends to be relatively high as a result of population pressures, land tenure systems, national development policies, lack of energy resources, and many other factors. In many instances deforestation is a serious concern. Even though this practice is as old as mankind, it still occurs in many instances without adequate thought or understanding. Deforestation for agricultural development is often based on the assumption that the soils under a vigorous forest are well suited to seasonal crop production.

Current Global Conditions

Awareness of the importance of agricultural sustainability varies tremendously across the globe. The response in any given region or country appears to result from the interaction of a number of variables.

One such interaction is among the national economic status, level of development, agricultural policies, and demographic trends.

Another is the effectiveness of land and water resource management strategies at the farm and ecosystem levels. The economic capability of farmers to generate sufficient income to support agricultural development is important. It appears a truism that most landowners anywhere in the world do not want to degrade the land, but in order to survive on the land they are forced to make use of it.

The availability of practical, cost-effective technologies and production inputs is a vital factor in determining whether or not a country or region is achieving sustainable agriculture. Without such technologies and inputs the farmer is left without choice but to utilize the best he can find and hope for the best. This is particularly bad in those situations where there are no existing institutions to educate them to the alternatives available to them, and also the consequences.

Unfortunately most of our agricultural development plans around the globe have been, and still are, cast in a very short-term time horizon. Ruckelshaus has pointed out that "unlike railroad tracks, economic development and environmental protection really do converge if you take a long-enough view." We must adjust our thinking to what the term "sustainable" means.

We in the developed countries have set a bad example for our counterparts in the developing countries in that we have abandoned nearly all of our long-term agricultural research plots for purely economic reasons. The Rothamstead plots in England are still maintained but most of the similar studies in the United States have been terminated or drastically reduced since the 1950s. Therefore, we do not have many long-term reference sites to study the accumulative effects of our farming systems.

Steps Toward Achieving Global Agricultural Sustainability

There are many complex variables that influence the practices farmers utilize in their farming systems. We must identify and place priorities on these variables if progress is to be made toward achieving agricultural sustainability around the globe.

1) The world economy must be reinvigorated. Without a healthy economy, developing countries will be hard pressed to assist their farmers to achieve sustainability. This means the developed countries must accept their responsibility in adopting trade policies which are favorable to developing countries.

Developed countries must also minimize the providing of agricultural products, especially food grains, to developing countries at highly subsidized prices, thereby undercutting local farmers.

Studies by Kellogg and other U. S. economists have shown that it is in the national interest to assist a developing country in its development, especially in agriculture. Korea and Taiwan are two good examples. Generally, between 1974 and 1984, the value of LDC's agricultural imports increased 141 percent at the same time that their share of world exports declined.

We in the developed countries must accept the fact that future global security depends upon our success in assisting the developing countries achieve economic growth. The good news is that in addition to the humanitarian and security reasons, it is also in our economic interest.

2) We must continue to search for ways to assist all countries in achieving a reasonable level of population growth. If many African countries continue at present growth rates, it will become impossible to achieve agricultural sustainability, especially in the more fragile agroecosystems. Deforestation

and desertification will grow at a more rapid rate under such population pressures.

There are those who state that population growth will automatically be controlled if countries achieve economic growth, but I doubt if it is that simple. Factors such as income distribution are critically important. We must look to the past and learn from our mistakes and successes in population control programs.

3) National agricultural policies around the globe must be changed so that they create an economic incentive for farmers to produce those commodities for which they are internationally competitive. Under these conditions, farmers will adopt the long-term outlook required for agricultural sustainability.

The attainment of these favorable policy changes rests to a major degree in the actions of the international business community and the World Bank. The actions of donor country development agencies, such as AID, are also important to the process. We can only hope that all of these organizations will cooperate in a responsible manner to assist the developing countries with policy modification in a coherent manner. It is encouraging that AID has in recent years made policy dialogue a major factor in their foreign assistance program.

4) We must assist nations to create the agricultural institutions essential to their long-term competitiveness. These include research, educational and credit entities. They may take many forms as they are structured to fit into the organizational pattern of any given country, but they must successfully deliver education, new technology and services critical to the farmers.

Much has been learned since World War II about institution-building. Many of us have seen past errors committed when we have tried literally to transplant developed-country institutions into developing countries. We are surely beyond that time now and have learned how to go about institution-building in a more thoughtful manner. Here again, we must learn from our successes, and there have been many.

5) Given the successful advance of the above listed factors, the achievement of global agricultural sustainability will be determined by long-term research, conducted in all countries and in all regions of all countries. The International Agricultural Research Centers have come to realize that successful technologies must be adapted to the conditions of the agroecosystem in which they are used. Only the national plant breeders or agronomists are in a position to select the combination of germplasm and practices best for their agroecosystems. The same is true for the animal sciences.

One important policy question that must be faced by each country when formulating its agricultural research strategy is what balance to seek between development of the more productive

farm lands in favorable climatic zones versus the more fragile ecosystems where sustainability is most difficult to achieve.

In part this question may be answered by the relative balance of the two within a given country. It seems obvious one should never exclude research on either environment, but in general the country should give priority to achieving maximum sustainable food production on the most favored lands in the interest of long-term economic security for its people.

At the same time, deforestation and unsuited practices on the more fragile environments must be discouraged. In some instances new technology may render crop and animal production sustainable in these fragile systems, but we should not assume that to be the case. If it were true in the United States we would not need the Conservation Reserve Program.

There are several areas of research which need to be emphasized as we move to achieve sustainability:

1) Farming Systems. These include more emphasis on conservation tillage, integrated pest management and rotational cropping. Much has been learned about each of these and yet they are not presently utilized to the degree they should be around the globe, or even in the United States.

2) Integrated Inputs. Agricultural science has become highly specialized. Most of the research conducted at present is limited to one, or occasionally up to three, variables, with all others held constant at some optimum level. We do not have adequate information as to the interaction of these variables whether we are talking about plant nutrients, herbicides, fungicides, insecticides or any other chemical.

It is time to accept that we must establish long-term multiple-input studies in many agroecosystems around the world. Only then will we begin to accumulate data which will indicate whether or not present farming systems are sustainable within the agroecosystem where they exist.

3) Social/Economic Factors. There must be more input from social scientists and economists in determining what research to conduct regarding sustainability. Crosson has stated, "A policy to direct more resources into research designed to increase the profitability of alternative agriculture deserves serious consideration. Successful research of this kind would provide farmers with an economic incentive to adopt more environmentally favorable agricultural practices, and society as a whole would benefit."

4) Biotechnology. Recent advances in molecular biology have made it possible to adapt animals, plants, and microbes in ways that allow them to grow under conditions previously unsuited.

These techniques offer promise for producing plants or animals economically in areas such as the vast llanos of Colombia or the cerrados of Brazil. It is not reasonable to assume these techniques will produce specifically adapted plants or animals for every fragile agroecosystem in the world.

Summary

In this time of rapidly growing populations in many countries of the world and escalating degradation of the environment, we must focus our attention on global sustainability of agricultural systems.

In the developed and developing countries alike, there is a growing concern about the sustainability of current systems. We must adopt a long-term vision rather than focus on short-term economic gain.

To achieve agricultural sustainability we must reinvigorate the world economy, with the developed countries being the key factors.

We must also assist the developing countries to establish economic policies favorable to agricultural production; achieve favorable population growth rates; and establish national institutions to provide research, education and services.

Finally we must create and strengthen national agricultural research programs which successfully produce new technologies adapted to local agroecosystems.

- - -

Readers interested in the references for this paper may contact the author.

DISCUSSANT

Jeffrey Leonard

Hutchinson's discussion outlined in a very general way how complex the challenge of sustainable agriculture really is. It integrates disciplines far beyond agriculture and agricultural economics and requires attention to economic policy, the education system and scientific research.

My comments will focus a little more directly on what I see as not a new issue but a more important issue in achieving agricultural sustainability in the future: The need to focus much more direct attention on preserving the productive potential of the land and the natural resource base upon which all agriculture in the long run must depend.

I think this is widely recognized in the agricultural community. Borlaug, for example, says today that anyone who is concerned with food production in the developing countries must address the protection of the renewable resource base--trees, water, soil resources--if they are going to maintain food production in the long run.

In many ways much of what we say today is simply recast; old wine in new bottles, following development fads. So here in Washington we hear the new buzzword is sustainability.

However there are several important reasons why the resource or land management agenda is much more important--and is likely to become even more important--in conjunction with technological development, for example.

1) Our own experience with agricultural development and expansion in the United States underlines the fact that in the early stages, often when production is being increased through the successive integration of new lands or the development of new agricultural lands, there is a helter-skelter sort of wasteful process that occurs.

Many developing countries today after several decades of this helter-skelter kind of development are reaching the point where we may have found ourselves in the 1930s. They need to go back and begin taking care of some of the mess, addressing some of the land challenges such as soil erosion, protection of their water resources in certain areas, and so on.

2) In the 1950s and 1960s the priorities were to get the ball rolling. That meant in the area of science and technology developing and improving germplasm as early and as much as possible in basic food staples. It meant on the infrastructure side getting as quickly as possible irrigation, all kinds of road building, and so on, to make sure that good agricultural areas had access to markets, inputs and other needs.

The priority in those decades, really into the 1970s, was not to address soil erosion in the developing countries and the priority was not to install drainage in all the irrigation systems. In some respects we might not have been able to achieve the kinds of progress during that era that we have seen and that Mellor talked about this morning had we needed to pay attention to those as priority issues.

But we are entering a second generation in the development era. We see now that in many cases the tremendous advances in places like India and Indonesia have been threatened by soil erosion, by excessive use of chemical inputs, the increased resistance of pests, and other problems.

We see a serious gap between expected yields and actual yields in almost every irrigated area in the developing world because of poor management of the water resources, because of siltation of canals in outlying areas.

So in addition to seeing in front of us the need to protect the investments we have made in the past, we see also a tremendous need to look beyond the achievements of the Green Revolution, to look beyond what we have achieved through the application of technology in the flat, fertile, irrigable areas of the world.

3) That raises another type of challenge, a challenge albeit that will be met by science and technology, but of a different sort. I can think of three areas in particular where we need to refocus or redefine the scientific and technological challenges for the future: arid lands, hillside areas, and the moist tropical soil areas.

Arthur Lewis, the Nobel-Prize-winning economist, was asked a couple of years ago by the World Bank to look back to the 1950s and what agricultural economists were thinking about and what they underestimated; what challenges they did not see.

One of the answers he gave was that we did not see quite how high the barriers were in arid areas. Our confidence that technology could overcome the agricultural production challenges in the arid zones was too high perhaps. So I think we need a redoubled effort in that area.

There is a lot of work going on in land grant colleges in the United States on the hillside areas of the developing world.

Perhaps most in the news because of the environmental concerns of global deforestation, climate change and the local environmental destruction are the moist tropical soil areas, particularly in those areas that have already been degraded; for instance in Brazil where you cannot really talk about having pristine Amazonian forests anymore. We need to talk about increasing the productivity of those ecosystems lest the million

or so people who are living in those areas continue into more and more marginal ecosystems.

In summary, land management concerns are going to grow much more important in the 1990s, as many developing countries move more and more to the stage where agricultural growth is secured not so much by opening up new lands but through increased intensive use of existing lands; as we need more and more to protect investments of the past in the Green Revolution and the irrigated areas; and as we try to meet the new challenges of developing those either fragile or marginal areas where large numbers of people already live or will live in the future.

A few points that I see as important in that process of looking toward the new or emerging challenges of land management in securing the agricultural growth that all agree we need to see in the coming years in the developing countries:

Virtually every speaker today has emphasized in one way or another the effects of U. S. trade and its regulatory structures on the developing countries and the need to pursue open markets, allow the countries to pull themselves up by their bootstraps by trading with the United States, particularly in agricultural commodities where they have an emerging comparative advantage.

We need to look more carefully at some of the potential natural resource and environmental implications of many of our policies.

One issue that comes to mind quickly is that of high pesticide use in developing countries. At the same time, we see all kinds of proposed legislation in the United States to prohibit export of certain pesticides or to prohibit the existence of residues of certain pesticides on fruits, vegetables, other agricultural commodities coming into the United States.

We know that only a very small percentage of the total imports into the United States is examined for pesticide residues. At the same time virtually all agricultural commodities coming into the United States--fruits and vegetables in particular--are inspected for visual quality.

Incentives are there to use megadoses of pesticides to secure visual quality--partly driven by U. S. consumers and what they expect. The rates of pesticide use on fruits and vegetables produced for the U. S. market in Central America certainly are extraordinarily high.

Another important issue is land-use implications and therefore the natural resource management implications.

The push to agricultural diversification, which in and of itself is extraordinarily important for many, especially small,

developing countries that need to get out from under the over-dependence on a few commodities whose prices have been depressed in recent years. At the same time there is a certain danger of what I would call a "primrose path syndrome", and perhaps the land grant colleges in the United States participate in this.

I traveled up and down through many countries in Latin America and managed to see the same agricultural economists check into the hotels where I stayed. They all seemed to be telling each individual country the same thing: Cardamom, cut flowers, all kinds of specialty crops, nontraditional agricultural exports.

As important as all of these are, as important as diversification is as a goal, we need to be careful not to push the developing countries toward a new form of dependence, over-dependence, on how much the market will be for cardamom in the 1990s in the United States, for example.

There is concern about the natural resource base in many of these countries, the problems of land-use disruptions, when huge amounts of resources and large acreage are deployed into certain commodities on the expectation that access to U. S. markets will be secured. Many types of concern expressed in Congress indicate that this in itself may be an issue. There is also the concern that our supply may far exceed demand in many of these narrow specialty niches.

More directly of concern to the natural resource management area is the need to focus our research much more on the sustainability of rural production systems.

In the international centers now, for example, there tends to be a focus on sustainability for individual crop commodity production; not so much on sustainability in the long term of the natural resource base or the rural production system.

The danger is that agricultural sustainability, for instance in moist tropical soils, may depend as much on an evolution over time of commodities. For tropical soils, Pedro Sanchez (North Carolina State University) tells us now that the best they can see is an opening regime of perhaps rice or sorghum and moving gradually into long-term agro-forestry types of commodities. Therefore a singular focus on individual commodities may not suffice for certain areas, in particular those tropical ecosystems of the developing world.

There also needs to be much more research attention directed toward tree crops. Certainly in the International Agricultural Research Center system there is not as far as I know any germplasm base of tree crops. The International Crops Research Institute for the Semi-Arid Tropics does not have anything like a germplasm bank as the agricultural crop institutions have.

In spite of the fact that I agree with Hutchinson that agricultural sustainability does not equal low-input agriculture, I think we need to make a major push for lowering agricultural inputs in certain areas. The excessive, in fact astronomical, use of pesticides in many areas poses not only tremendous health problems but in the long run economic problems associated with resistance and the farm costs that need to go to higher and higher doses of pesticides.

We have some management experience, particularly with rice in Indonesia, that indicates that you can raise production and lower inputs and still increase farmers' profits. We need to focus on duplicating that in other crops in other regions. It is going to be very region and agroecosystem specific, and therefore very research intensive.

I want to emphasize my awareness that Integrated Pest Management is perhaps one of the most difficult things to do; far more difficult than applying chemicals. It is labor and management intensive and in developing countries at least skilled labor, in terms of getting farmers into the field and following all the procedures, is extraordinarily difficult to accomplish. So I am under no illusions that this is an easy task.

Whether or not you want to focus on food production or market participation and export production, it is striking in so many of the developing countries how little integration there is between city and countryside. The experience of very few developing countries is such as William Jennings Bryan described the United States: "The grass will grow in the cities if the farms stopped producing."

If you go to Brazil, it is astonishing to find hundreds of square miles where farmers are producing at subsistence levels for themselves, and at the same time cities in the area are fed by food trucked in from thousands of miles away. The countryside is not trading with the cities for implements, and there is no sort of rural production system creating non-farm employment and small-scale processing, and so on. This is an issue extraordinarily important for agricultural development because of the implications for resource management.

My own assessment in Brazil is that we cannot have sustainable agriculture if farmers are planting rice, beans, maize, sorghum and squash. After a few years they wear out the soil; then they move much more into market crops. To do that we need infrastructure, access to cities, access to credit, marketing experience and so on. It is a very different type of agriculture than what we see right now in that area.

There is a need for the agricultural community to look much more clearly at the whole environment dimension in agriculture and food policy and research in the future. For example, just last week, the U. S. Treasury Department issued new indications that it would henceforth be very concerned and scrutinize

international development projects and entities that involve the use of wetlands throughout the world.

Many of you know that wetlands have become a big political issue in the United States as well. Yet there is probably a lot of research going on in the world that is going to open up new wetlands. It is going to make them more susceptible to the assault of agriculture.

We are going to have to pay attention at the front-end of the agricultural research process to the long-term implications-- not only to value these lands in an agricultural sense but to value them in their own right for the fisheries contributions and perhaps even their contributions as a carbon sink. They need to be evaluated beyond just their agricultural potential.

I want to conclude by making one remark on the dilemma raised by Hutchinson because I see this as one of the most critical dilemmas for resource management and certainly for environmental groups operating in developing countries today: Whether we focus our research attention on the development of the most productive agricultural lands in favorable climate zones or whether we focus on the more fragile ecosystems.

My remarks and those of Hutchinson as well lead us to the conclusion that we need to do both.

Mellor emphasized the need to push further in technological development of strains of rice and related commodities. We have already had the Green Revolution; we need to go back again for more increased potential.

At the same time, we cannot ignore the fact that some of the most intransigent sorts of pockets of poverty and low production in the developing world are in fragile, marginal ecosystems-- hillsides, dry areas, tropical moist forest areas.

I submit that on both of these fronts in our research and in the policies we pursue, the maintenance of the land base will be more and more important and critical as we look at agricultural development in the Third World.

DISCUSSANT

Gerald Thomas

I concur with Hutchinson's emphasis on economics and the importance of building incentives for production aimed toward the welfare of the people of the country.

We need to build into these programs an incentive to conserve as well as an incentive to produce. I am concerned that a lot of the more recent increase in productivity has been at the expense of environmental considerations.

I had the privilege of chairing the task force for BIFAD's Report on Environment, Natural Resources, and Sustainable Agriculture. Many people here contributed to it. We had input from the environmental community, the AID community and many others interested in the question of sustainability.

We made some specific recommendations on strategies to move toward sustainability. And we made some very pointed suggestions to BIFAD for follow-up activities.

One thing we pointed out in the report, which may not necessarily be accepted by BIFAD, was enlarging the Title XII mandate to permit a more comprehensive approach to environment and natural resource issues in agricultural development. This would include such areas as forestry, wildlife, aquaculture, more ecology-oriented kinds of activities and multiple use management of grazing lands in coastal areas, and studies of off-farm impacts of agricultural production practices. A bigger look at the total system. A lot will depend on the political situation and whether or not it is important enough to open up the Title XII legislation, which is certainly well-accepted and well-grounded.

It is obvious as we look at environmental problems that we need to encompass a much broader team than has presently been involved in development activities.

The task force is concerned, as several other speakers have mentioned, about the trend toward earmarking of international development assistance funds. We believe that if all development projects had a conservation objective and an environmental improvement objective written into each project there would be less pressure for earmarking and less tendency for the environmental groups, who are very much concerned about these issues, to say to Congress, "Let's set aside 10 percent or 20 percent of the total appropriations for environmental concerns."

Environment really encompasses everything that AID is doing. We need to identify that more clearly as an objective in each development project.

We are recommending wider use of the collaborative research model, particularly in examining fragile environments and those kinds of problems that transcend country boundaries.

We are certainly recommending a better approach to longer-term funding by Congress and in planning activities of AID.

We also encourage the university community to assist with the education of the public on the importance of development assistance and to try to maintain or increase the flow of development assistance.

We are recommending that we look at more careful linkages and longer-term linkages between the universities and the developing countries. We also recommend establishing some continuing linkages with the middle income countries as Love mentioned. Many of the environmental problems are not confined to the AID recipient nations.

The task force encourages the university community in cooperation with BIFAD to develop a strategy to become more involved with the other donors in international development, particularly the World Bank and the Regional Development Banks.

The strong mandate by Congress for the World Bank, the Secretary of State, and the Secretary of the Treasury to examine all World Bank loans in terms of their environmental impact and sustainability cannot be ignored. We believe the talent to do this will have to come from the university community. Through BIFAD we can work more effectively with AID and the World Bank in the evaluation of all countries' development activities, whether they be funded through World Bank loans or directly through AID.

The specific follow-up activities we recommend for BIFAD:

* A conference jointly planned with the environmental community (representing some five million people in this country) so that the environmental agenda for development assistance is not written by emotion or by political pressure but jointly by a careful analysis and involvement of the scientific community.

If we do not work more closely with the environmental groups we will see them moving without us. So our challenge is obvious.

* A workshop to talk about and identify more clearly the measures of environmental change and resource deterioration. We need to ask such questions as: What compromises are acceptable? We know that our own agricultural system is not sustainable in the long haul because we are living off depletable resources. We know that some erosion is geologic; some of the desertification process may not be possible to stop or to reverse. We need to decide what compromises must be made and are acceptable as we try to build mankind into the evaluation of these ecosystems.

We have to face up to what I call the "echoes of the ecos." The ecologists and the economists. I hear these echoes of the ecos, the reverberations of these two great eco disciplines, and it is clear that the historic driving force has been economics and not ecology.

It would be unrealistic to assume that the strong echoes of economics will diminish, but we must move toward a more pleasant blend for our great grandchildren--a symphonic balance between economic objectives and environmental constraints.

This balance will be obtained when the economists and the ecologists come together to place proper monetary values on the basic resources and a clean environment--when we are able somehow to build all of these ecological considerations into economic development. Only then can we properly approach issues of sustainability.

The challenge is great for the scientific community. We have a unique opportunity now to bring together the many interest groups and disciplines. Indeed, it is even beyond an opportunity. It is a necessity, if we look at the future that our great-grandchildren and their great-grandchildren will inherit from us.

I congratulate BIFAD for their initiative on the issue of sustainability. It is an important first step.

Part III Regional Challenges

Meeting the Challenges in Africa

Chairman Edward L. Saiers
AID/Bureau for Africa
Keynote Speaker Uma Lele
The World Bank
Discussant The Honorable H. S. Mamba
Minister of Agriculture,
Swaziland
Rapporteur Winfrey Clarke
Virginia State University

Meeting the Challenges in Asia

Chairman William P. Fuller
AID/Bureau for Asia & Near East
Keynote Speaker Robert Havener
Winrock International
Discussants Vernon Ruttan
University of Minnesota
Charles H. Antholt
The World Bank
Rapporteur Francille Firebaugh
Cornell University

Meeting the Challenges in Latin America

Chairman Steve Wingert
AID/Bureau for Latin America
and the Caribbean
Keynote Speaker Arthur Coutu
North Carolina State University
Discussants Martin Pineiro
Inter-American Institute for
Cooperation on Agriculture
Jack H. Vaughn
Conservation International
D. Woods Thomas
Purdue University
Rapporteur John Nicholaides
University of Illinois

Meeting the Challenges in the Near East

Chairman Richard Cobb
AID/Bureau for Asia & Near East
Keynote Speaker Elias H. Tuma
University of California, Davis
Discussant Robert Hill
Utah State University
Rapporteur Harold Matteson
New Mexico State University

**AGRICULTURAL GROWTH, DOMESTIC POLICIES,
EXTERNAL ENVIRONMENT AND ASSISTANCE TO AFRICA:**

LESSONS OF A QUARTER CENTURY

Uma Lele*

Africa's economic crises is coming increasingly to be recognized as stemming from the critical state of agriculture in most African economies. However, little systematic data-based, country-specific and cross-country analysis has been undertaken of Africa's agricultural problems and of their implications for government policies and donor agencies.

Since 1984, a long-term, cross-country comparative study called Managing Agricultural Development in Africa (MADIA), has been underway in the World Bank with the active collaboration of seven other donors and six African governments.

The countries selected for analysis are Kenya, Tanzania and Malawi in East Africa and Nigeria, Cameroon and Senegal in West Africa. Together, they have 40 percent of the population of sub-Saharan Africa and 50 percent of its GNP; and cover almost all the ecological zones in Africa.

Despite their diverse physical characteristics, and although they have followed different policy paths and achieved different outcomes, the six countries have enough features in common to permit fruitful comparison of the interaction of national policies with resource endowments and other factors in explaining country-specific performance variations.

The donor participants in the MADIA study are the World Bank, the U. S. Agency for International Development, the United Kingdom Overseas Development Administration, the Danish International Development Agency, the Swedish International Development Agency, the European Economic Community, France and West Germany. Together, they have provided nearly 60 percent of aid flows to Africa.

The MADIA study focuses not only on the sources of growth in agriculture during the past two decades (based largely on conventional inputs of land and labor), but on the implications of each country's initial endowments and subsequently accumulated balances of the different forms of capital that represent sources of future growth.

- - -

*Readers interested in a longer version of this paper with supporting data and documentation may contact the author.

Our definition of capital includes not only human and institutional resources but also political capital--including the strength and stability of government commitment to development--factors not usually incorporated by economists in even the broader definitions of capital.

For each of the MADIA African countries, our analysis begins with an assessment of natural resource endowments, including initial post-independence conditions as determined by colonial inheritances and political and economic structures.

Agricultural performance is then analyzed over a period of more than two decades (from 1969 to 1988, depending on data availability).

The causes of differences in countries' agricultural performance are then examined. The causal variables are divided into the categories of luck factors, macroeconomic factors, and sectoral factors, the latter two categories covering the policy response of governments to the circumstances arising out of factors in the first category. We believe there has been relatively little focus in prior analysis on the genesis of country policies, or on the interactions between the resource endowments (broadly defined) at the disposal of governments and the policy responses they have devised to adapt their endowments to developmental challenges and goals.

Aid Flows to MADIA Recipients

The 1973-74 drought was a watershed in the levels and patterns of development assistance to Africa. The rise in world market prices of cereals heightened concern about the increasing vulnerability of the least developed countries to international fluctuations in food supplies, and intensified interest in expanding the continent's food production capacity.

The drought also came on the heels of a growing awareness that, following the Green Revolution in Asia, "trickle-down" effects alone could not be expected to solve, or even speedily and substantially reduce, poverty in the developing world.

These and various other developments, produced a series of diverse international articulations of the need to make a direct "Assault on Poverty."

The new focus on assistance for poverty alleviation and domestic food production in recipient countries generally, and in Africa in particular, resulted in five of the six MADIA countries experiencing substantial real growth in capital transfers for nearly a decade, much of which was justified in terms of the need to give priority in donor assistance to agriculture and rural development, and especially to achieving food security.

The share of resources allocated by development agencies to agriculture and rural development also rose sharply: the World Bank adopted an informal guideline that 25 percent of its lending should go to agriculture and rural development, more than doubling this category of its assistance.

Development financing rose strongly in real terms in the late 1970s or early 1980s but fell in the following years (though the size of the flows varied considerably by country) before rising again in 1986.

By the late 1970s, a combination of developments--including two oil price shocks, the decline in Africa's terms of trade owing to the recession in OECD countries, and the internal expansionary policies pursued by governments had begun to produce major macroeconomic difficulties in many African economies.

Implementation of the large portfolio of rural development projects had also become a financial and administrative impossibility leading to a shift in the focus of development assistance toward support for policy reform.

With the benefit of hindsight, it is evident today that the conjunction of an imperfect understanding of the international economic environment (particularly the decline and volatility in terms of trade and domestic public expenditure) and an inadequate grasp of the diverse mix of variables affecting the internal growth processes of individual developing countries, adversely affected the content of donor policy advice and development assistance.

In retrospect this judgment holds true for both the overcommitment to the anti-poverty crusade of the 1970s and the similarly zealous faith in "getting prices right" during the early 1980s.

For example, the effect of concerns about poverty alleviation as reflected in integrated rural development projects was to shift donor and government resources a) away from export crops (which the "colonial" donors had tended to emphasize) and towards support for food crops; and b) away from the high potential areas where export crops were typically produced and toward low-income regions.

Such a change in investment policy, which favored resource-poor regions with few known technologies, slowed agricultural growth. It did support important socio-political objectives of the governments, including national integration while also laying the foundation of human services in areas previously barely touched by infrastructural and agricultural investment.

However, the subsequent shift of development philosophy in the early 1980s--away from emphasis on integrated rural development and in favor of macro and sectoral adjustment lending and private sector initiatives--has been similarly flawed by its

inadequate recognition of the variety of causal factors underlying past growth (or decline); of the likely effects of price-based policy reforms on aggregate supply responses; and of the complementary, nonprice microeconomic actions needed to ensure that the policy reform process was sustainable beyond the short term, and that it harmonized with underlying developmental realities and long-term goals.

Agricultural Performance in MADIA Countries

This discussion of country performance needs to be viewed against the background of several major ongoing debates about the appropriate balance among: food and export crop production; growth and equity objectives; and price and nonprice factors in enhancing (and explaining) agricultural performance.

Food and Export Crop Production. Development debates and government and donor policies have tended to emphasize the conflict between food and export crop production, rather than promoting policies that support balanced development of the agricultural sector as a whole.

This approach has resulted in swings in aid flows and activities supported by donors, with a major shift of focus from export crop expansion in the 1960s (reflecting the priorities of the colonial era) to support for foodcrop expansion in the mid-1970s, in response to the deteriorating food situation on world markets and in the African continent.

This was followed by a new emphasis on the need for export orientation in the early 1980s, associated with the World Bank's report on sub-Saharan Africa (the so-called Berg Report) and exemplified by the structural adjustment programs initiated in Africa and elsewhere.

In the latest swing of the pendulum, this priority has been succeeded by a revival of concern about food security, as reflected in recent policy statements of major donors.

We address this issue by contrasting the experience of Kenya, which has pursued an agriculturally-led development strategy and has achieved growth in both food and export crop production, with the very different policy stances and performance records of several other countries in the MADIA sample, where unbalanced positions of either favoring or discriminating against the export crop sector have had adverse consequences for both growth and equity objectives.

Growth and Equity Objectives. Development economics literature in the 1970s tended to emphasize the extent of complementarity (rather than competition) between growth and equity objectives without paying adequate regard to its key determinants, in particular the profile of asset distribution in a given economy, and the substantial public sector planning and

implementing capacity needed for the provision of public goods in support of smallholder production.

These two factors critically determine the time horizon within which growth and equity objectives can be reconciled.

Evidence from Kenya, Tanzania and Malawi illustrate the extent of the tradeoffs between growth and equity that have in fact occurred during the short- and medium-run under specific country conditions.

The comparative experience of these countries also illustrates the complex interactions among initial conditions, resource endowments, external shocks, and policy responses that have determined short- and long-run growth and equity outcomes.

Price and Non-price Factors. The primacy given by donors to "getting prices right" since the publication of the Berg Report on sub-Saharan Africa has come under criticism from several analysts.

Examples from Nigeria, Cameroon, and Senegal show that price incentives are a necessary but by no means a sufficient condition for broadly-based and sustained agricultural growth.

A variety of nonprice factors--including the availability of effective agricultural research, extension, input supply and output marketing arrangements--have played important roles in determining overall supply responses, as distinct from relative cropping shifts. Country-specific political and other unquantifiable factors also play a part in providing nonprice preconditions of growth.

The analysis also shows that structural adjustment lending needed to be complemented by other forms of project and nonproject assistance, to reconcile the short-term nature of structural and sectoral adjustment programs and the time required to alleviate many of the nonprice constraints on growth.

This is not to imply that Africa is not getting other forms of assistance. Rather that the glamour which is attached to the relatively short-term structural adjustment lending now needs to be attached to the broader and longer-term developmental concerns that received attention in the 1950s and 1960s.

The Roles of Resource-Poor and Resource-Rich Regions in Agricultural Development. One of the development debates that has not yet occurred--or rather that has taken place mainly by default in the 1970s as a result of the perceived failure of the trickle-down following the Green Revolution in Asia--relates to the appropriateness of diverting scarce government and donor resources and policy attention to the alleviation of poverty and food security concerns in resource-poor regions, as opposed to focusing on the development of other areas with better natural endowments or known technological potential.

The contrasting approaches of Tanzania and Kenya illustrate their different growth performance. Despite Tanzania's worthy efforts to open up areas of high potential, its policy of quick universal coverage of services to all rural areas made it financially impossible to maintain many of its worthwhile long-term developmental efforts in the productive and social sectors, despite substantial external assistance.

Factors Explaining Performance

The "Luck" Factor. Initial conditions reflecting luck are divided into the quality and quantity of natural, human capital, and institutional resources at the time of independence.

External shocks are then decomposed into changes in overall international terms of trade, interest payments on foreign borrowings, and changes in foreign demand for their overall exports, i.e., the extent to which shares were maintained in world markets.

Finally, internal and external political strife that affected the countries' performance is also considered as well as the effect of domestic decisions on the current account.

Macroeconomic and Sectoral Policy Response Factors

It is clear that all six countries have been faced with absolute shortages of critical physical, institutional and human capital assets, such that governments and donors need to deploy scarce resources optimally to obtain the best development returns.

In reviewing the evidence on relative returns to resource use in agriculture vis-a-vis other sectors it is important to recognize that returns in agriculture are a function of input and output prices as well as the productivity of the resources deployed.

Also, expectations about future world and domestic market prospects have been as important--if not more so--in determining the policies pursued than the actual subsequent course of developments in these markets.

The role of nonprice factors has attracted less analytical attention. In our view, an item in this category--public (including donor) investments--has formed a significant but usually overlooked part of the picture.

These investments have in turn influenced the levels of taxes and subsidies on production and consumption that governments have tended to apply in subsequent periods, in order to maintain and implement activities initiated in the preceding periods.

Similarly, by influencing the technological frontier, public expenditure has influenced the relative returns to factors of production.

Finally, the actual allocation of land, labor and capital to activities in agriculture has also been determined by the ability of small farmers to mobilize and use resources efficiently--and that has been affected by market as well as nonmarket forces.

Policies of Particular Interest to BIFAD

Technology Policy. The fundamental importance of increased factor productivity in agriculture has been stressed in a variety of different contexts in MADIA countries.

Increased foodcrop productivity is important not simply for improvement of human welfare, because small producers give first priority to achieving food security through the use of their own resources. This releases land and labor for diversification into other higher-value activities for domestic consumption or the market.

The greater progress of Kenya in improved maize technology reflects a longer history of effort for developing agricultural technology suited to the particular requirements of small farms.

This was not a priority for governments and donors in the 1970s when extension programs received priority over research. It is only in the 1980s that donor financing to establish national agricultural research capacity has been provided in Africa.

Our analysis of the experience in building indigenous research capacity indicates that, in contrast to Asia earlier, there is still relatively little political commitment to science and technology for the development of smallholder agriculture.

In externally assisted programs, the substance of research (as it relates either to factor endowments or agricultural policy) has received little attention compared to the provision of physical capital and external technical assistance.

This is because there is not yet adequate agreement among the donors and the government on the substance of research.

Only the United States has played an effective role in building African scientific manpower, albeit primarily in foodcrops research. Meanwhile, ineffective foodcrop research systems and the diversion of resources from those systems into the staffing of rural development projects and elsewhere have been major problems in all MADIA countries.

Commodity research for export crops has historically been of high quality but deteriorated in most MADIA countries.

A once impressive Nigerian scientific community remains unsupported and unproductive (despite substantial increases in expenditures on research during the oil boom), mainly because of unstable funding and lack of political support for research.

In Tanzania, the breakup of the East African Community and subsequent primacy of ideological over technocratic considerations in the formulating and implementations of agricultural policy has undermined research.

More generally, the rapid indigenization of research staffing has been a problem in most MADIA countries, along with poor research management and leadership.

MADIA analysis of technological capacity stresses that long-term political commitments of governments at the highest level will be essential for establishing sound research policy and its implementation. This will have to involve far better utilization of trained African manpower on a stable basis, as well as far greater investment in indigenous human capital and in the organizational and management capacity for research.

Finally, the MADIA study emphasizes the neglect since the early 1970s of export crop research (in contrast to the colonial era) by governments and donors alike (partly reflecting the combination of competing commercial interests).

In the United States, for example, humanitarian concern about food security, and the related public relations importance of food security issues among constituents of foreign aid in the Western community, as well as the concerns about environmental effects of export crops, prevailed. It is striking to note that the Consultative Group on International Agricultural Research (CGIAR) provides relatively little support for export crop research, and despite the emphasis placed on export-led growth in policy reform in Africa, there has been little discussion of export crop research and support from the international community, except through individual bilateral efforts. Even the latter are atrophying with the passage of time.

Thus we do not yet see solutions to promote agriculturally-led export growth in Africa. The emphasis has continued to be on a relatively short horizon, mainly in the context of policy-based lending--approaches that have important merits in the right context but that lack the specifically targeted and catalytic approach to building a larger balance of capital that we consider essential.

Institutional Development. The MADIA study addresses several dimensions of institutional development that together critically determine the formulation and implementation of a cohesive agricultural policy.

The first issue concerns the relative roles of technocracies vis-a-vis political factors in the formulation and implementation of policy.

Because of the strategic importance of agriculture, in particular the food security issue, the role of the Presidency in agricultural policy has been strong in all countries. In some cases, the President has retained the agricultural portfolio; in others, the president's office increasingly "second guesses" the ministry of agriculture.

In Kenya, there has been greater responsiveness of agricultural policy to grassroots interests through the establishment of routine mechanisms which articulate these interests. This reflects Kenya's political struggle for independence, which was based on the Africans' assertion of their rights to land and to grow export crops, rights which were denied them during the colonial era. Kenya's policy therefore represents agricultural interests to a greater extent than other MADIA countries.

Elsewhere governments have tended to show little enthusiasm for grassroots institutional development, because they have perceived it as leading to alternative centers of political power. Emergence of such alternative centers of power explains the lack of stability of institutions even in circumstances where political stability has existed.

Substantial weaknesses in MADIA countries' formal institutional structures, as well as broad organizational shortcomings and poor demarcation of responsibilities between different levels of government (and among different units of management at the same levels) are the norm as are similar weaknesses in the allocation of developmental roles between government, commercial organizations and participatory institutions.

In our view, the institutional issue is an important constraint on development that has received far too little attention in analysis of agricultural development in Africa in relation to the weight given to macro and sector policy reform, even when allowance is made for the promotion of privatization and strengthening of the planning capacities of ministries under recent structural adjustment loans.

Indeed, given the underlying sociopolitical factors that have affected institutional choices, it is not clear to us that adjustment programs have adequately reflected their implications either for the content or the speed of institutional reforms.

Concluding Assessment

This paper, prepared as a part of the MADIA study, demonstrates the complexity of agricultural development in Africa, the number of variables that impinge on the outcomes, and in particular the extent of variability in the endowments of the countries as well as in the policy responses and outcomes.

In terms of initial conditions, Kenya and Nigeria were the most well off, followed by Cameroon and Tanzania. Senegal and Malawi inherited by far the least favorable initial conditions.

Nigeria and Cameroon had favorable external shocks due primarily to the dominance of oil. In Senegal, while the changes in external terms of trade were favorable due primarily to the role of phosphates, other external shocks relating to agriculture turned out to be unfavorable.

Fortunes of the more agriculturally-based economies in the East were less favorable than in the West. Terms of trade losses were the greatest for Kenya although both Malawi and Tanzania also suffered from major losses.

Only Kenya among the MADIA countries made the most of its initial conditions and pursued a combination of macroeconomic and sectoral policies that achieved rapid agricultural growth while also achieving equity.

While Malawi's growth record was good in the 1970s due primarily to its good macroeconomic policies, the land and price policies swamped the effects of other favorable policies in smallholder agriculture.

Nigeria's adverse policies and "luck" in terms of internal shocks to the system meant that it did not make good use of the resources at its disposal to lay the foundation for long-term growth, although much physical infrastructure got developed and social indicators improved. Political problems have been enormous in Nigeria; indeed the nature of policy responses were in many ways symptomatic of those political and institutional problems.

Cameroon followed more moderate policies than Nigeria, albeit with highly variable performance between cotton and other subsectors of the agricultural economy.

Tanzania and Senegal were the least well-performing countries. Whereas adverse policies played a part in both countries, Tanzania's more favorable resource endowments relative to Senegal's dominate the role of policies in explaining performance. In Tanzania's case, genuine strides were made on the equity front but could not be sustained due to inadequate attention to agriculturally-led growth.

While favorable price incentives through conducive macroeconomic and sectoral policies played a key role in explaining performance, the fundamental importance of the quality of natural resources, technological, institutional, political, and human and physical investments played a major role in the ability of small farmers to mobilize land and labor, the two most important factors explaining growth. There was relatively little technical change in the agricultural sectors of MADIA countries.

An important foundation of physical and human capital was laid in all countries, but successes and failures show the amount of time involved in learning-by-doing, and therefore how important it is to exploit initial conditions as well as how difficult it is to create a new niche through diversification. Ironically, the countries that attempted to diversify their economies the least rapidly did well.

Given the growing population pressure on limited land resources in Kenya, Malawi and Senegal, they face the most difficult problems. Now that Kenya has developed a sound foundation of smallholder agriculture, productivity increases will be crucial for growth. In Malawi and Senegal, smallholder agricultural faces far more complex problems in part due to the policies pursued in the 1970s. Tanzania and Cameroon, and to a lesser extent Nigeria, have better prospects, if only because of favorable resource endowments.

We note the relatively small role that donor assistance has played in the growth that has occurred in MADIA countries. Large amounts of donor assistance have been allocated with the best of intentions but to types of activities that have had little effect on growth.

Nonetheless, there are some outstanding examples of the catalytic role that well-conceived donor assistance can play. They include smallholder tea and coffee development in Kenya, cotton in Cameroon, and maize and small-scale irrigation in northern Nigeria and elsewhere.

The success with which donors have contributed to the growth process seems fundamentally to depend on the extent to which they understand the myriad micro-level constraints on growth prospects in individual projects and subsectors.

Not surprisingly, therefore, those donors with prior colonial connection with Africa have had a relatively greater share of the successes achieved than others. The importance of the "colonial" donors has been declining in Africa, however, and their ability to create sustainable indigenous systems has been limited.

This decline in external expertise and knowledge about Africa is especially worrying in relation to the amount of external financial resources being devoted to alleviating the continent's crises.

Equally worrying is the fact that with the major exception of the U. S. record (in Asia as well as in Africa), "new" donors have tended to underemphasize the importance of human and institutional capacity while overestimating the utility of aid in the form of physical plant and expatriate technical assistance.

It is important to stress that our findings reflect the donor studies carried out for the wider MADIA program.

The official studies contributed by the donors themselves emphasize the extent to which the effectiveness of external assistance has been undermined by the donors' limited ability to tailor their assistance to important aspects of the local conditions under which their programs operate, and to take adequate account of the impact of micro-level constraints.

Donors also note the tendency to respond to such problems by falling back on technological and organizational solutions arising from their own particular backgrounds and expectations, which may have relatively little connection in practice with recipients' needs or organizational and manpower capabilities.

Time and again, studies by MADIA's collaborating donors stress the problems associated with lack of country-specific knowledge, including historical and situation-specific constraints. They also emphasize the pressing need for a greater institutional memory in the donor community and a better understanding of the sociopolitical and technological factors operating in recipient countries, if the current focus of reform programs on the removal of price distortions is to be appropriately complemented by the institutional and other nonprice changes needed to give the pricing reforms a chance to work.

There also needs to be greater emphasis on the longer-term "superstructural constraints" that persist even while Structural Adjustment Loan-type programs are being completed--constraints that only Africans themselves can remove with increased political will and improved human and institutional capital.

The MADIA study also stresses the imperfect understanding of the real sources and causes of growth and the means to promote them. Donors and governments do not always agree on means or even on specific ends.

An objective diagnosis of a particular development problem (or definition of a particular policy goal) can only be built up through data-based analysis, in which donors and recipients need to share. This should enable donors and recipients to reach a consensus about the steps needed to solve the problem or achieve the goal. A second broad consensus then needs to be built within the recipient country (based on the involvement of individual recipient country policymakers in the previous two stages), so there is a sustained indigenous commitment to the reform process.

Finally, if the MADIA study has one observation to offer in addition to that of the need for greater depth in framing and implementing agricultural development strategies, it is the extent to which the swinging pendulum of donor concerns--from a preoccupation with equity in the 1970s to emphasis on efficiency in the 1980s--has tended to divert attention from more basic, long-run problems.

The emphasis on "quick" poverty alleviation during the 1970s gave priority to helping low-income regions and populations, and to raising foodcrop production.

The present tendency to emphasize equally "quick" solutions based on correction of price incentives and markets can lead to inadequate attention to an appropriate balance between food and export crop development; between growth and equity objectives (regionally and nationally); between short-term macro-policy adjustments and long-term capacity building; and between physical and human capital development.

The problems associated with framing and maintaining agricultural development strategies based on specificity and balance are very real.

If such strategies are to become successfully institutionalized, fundamental changes in approach will be needed. This entails a new focus on the part of donors and recipients alike--a more comprehensive, data-based, systematic and comparative understanding of specific development issues and constraints on a continuous basis, perhaps using much broader-based programs of analysis of the kind attempted in this study.

As a part of the aid coordination process, donors need to specialize and concentrate their resources on their respective comparative advantage.

The process of knowledge acquisition and utilization by African governments themselves needs to be supported so as to improve their ability to address their own development needs successfully. This process should include establishing and fostering centers of excellence on African issues, in both African and donor countries.

Implications for BIFAD and AID

As indicated, the MADIA study has a number of implications for BIFAD and AID in shaping a development strategy for the 1990s. There is a need to:

* Set clear and focused development assistance objectives by AID/host governments, based on comprehensive data base lessons-learned and true needs in Africa.

* A commitment by AID to a long-term (10 to 15 years) effort in Africa in terms of project design and implementation and funding.

* Capacity building (training, institution building, manpower development) is the comparative advantage of AID as a development assistance donor in the LDCs (the India experience). U. S. universities should continue to play a major role in this effort.

* Centers of excellence on Africa must be developed in African countries as well as in the United States to address specific needs of tropical agriculture.

* The number one priority of AID/BIFAD in Africa should be education and training--institution building.

THE CHALLENGE FOR AFRICA ELIMINATING HUNGER, ENCOURAGING TRADE, AND ACHIEVING SUSTAINABLE AGRICULTURAL DEVELOPMENT

The Honorable Siphon Hezekiel Mamba

Hunger, sustainable agriculture and trade are vital issues to Africa.

The first point I would like to make is that Africa is a huge and diverse continent. It is stereotyped too often.

The political and economic systems range from being based on strict Marxist/Leninist principles through African socialism to democratic capitalism.

Social structures differ from area to area. Hundreds of languages are spoken throughout the continent.

Many African countries had a colonial experience, but even here we find great diversity. Some countries were occupied by force and others, like my own country, sought protection from a colonial power. How the colonial power ruled differed greatly among countries, and there was a wide range of impacts on the social structure and political environment. In Swaziland, the colonial power did not interfere materially with the indigenous social structure; thus at independence it was easy to revert to and revive the customary system. In this regard we are unique.

Development partnerships in Africa should take into account the diversity of physical, social, economic and political conditions. They must deal with well-defined topics, areas and issues. Partnerships that will focus on specific problems, including trade and development, are needed.

Hunger

Starvation in Africa is a serious problem, but not all Africans face it. Specific areas, individuals and groups are famine prone. Good partnerships will provide better insights as to who is at risk and why certain people go hungry.

Partnerships in charity providing food-aid are commendable and Africans appreciate what has been received. Many lives have been saved. But in the midst of emotionally-charged situations when people are starving, it is tempting to rely on free food and fail to make the policy changes that will provide the incentive for people to become self-reliant.

- - -

*Readers interested in a longer version of this paper with supporting data and documentation may contact the BIFAD office.

We must not let free food from abroad destroy our local initiative and marketing systems and become counter-productive. Partnerships must help us to help ourselves. In a sense this is the theme for my discussion.

Trade

African countries must trade to survive. We need imports of tools and other capital goods for development purposes. In order to import we must export. The terms of trade are the critical issue. Trading partners who will help us with our trade balance problems are required.

To develop the type of trade we need our own people must become more knowledgeable about the world and regional trade processes. Many African countries are still too dependent on foreign firms for their international and regional marketing. We need partners who will train our citizens and help us increase our capability in market development, trade and agri-business.

Sustaining Agricultural Development

This is a critical problem for many African countries, and the African debt crisis is evidence of its severity.

Many agricultural and rural development projects in Africa have been financed through borrowing. When production did not increase as planned the country ended up with the debt but no means to repay it. The worldwide recession of the early 1980s and droughts intensified the problem. In addition, many development projects have faced serious cost over-runs. The reasons range from insufficient data at the planning stages to management constraints.

Governments have found it hard to control recurrent expenditure obligations. The need for social services exceeds the ability to pay for them. Sometimes the total commitments governments have made for their share of aid-assisted projects have been beyond their means.

Under these financial and economic conditions, it is very difficult to sustain agricultural development. Many of the problems are external to agriculture but agriculturists suffer the consequences. Africa needs a world-wide economic environment that is stable and partners in development who understand the financial plight and are willing to help the countries work their way out of it.

These problems have been further aggravated by aid donors who have frequently cut back their contributions at a critical time in the history of important projects and the recipient country is left in the lurch.

Swaziland's Experience

On September 6, Swaziland celebrated its 20th birthday as an independent country. At independence there were very few professionally and technically qualified Swaziland citizens; none with a bachelor's degree in agriculture. Lack of training in agriculture for Swazis is ironic since agriculture was then, as it is now, the backbone of our economy. Since then we have given priority to manpower development and we now have a nucleus of well-qualified Swazis, especially in the public service. But the national requirements are still high.

The right to land is a very important issue for Swazi people. Land is our social security network.

Recent research indicates that our customary tenure is not a serious constraint to increasing agricultural productivity, and we do not need dramatic changes in tenure which could cause serious social disorganization. We have both individual tenure farmers and customary tenure in a system that works reasonably well.

We have made fair progress in improving our infrastructure and institutions, but we are still more dependent upon foreign sources than we would like. We recognize that building these institutions cannot be done overnight; more time is required.

Our natural resource base is excellent, and we therefore have great potential for agricultural development.

The Post-Independence Strategy

After independence the government, with heavy support from aid donors, embarked on a bold program of agricultural and rural development. A major objective was to resettle Swazi families to increase their incomes and raise the general standard of living in the rural areas.

The aid donors who were our partners in development were unquestionably well-intentioned, and the first decade after independence was relatively harmonious. Sometimes the Swazis did not agree with the expatriate program managers, but since much of the financing was from aid, the Swazis had little power to change things. The world economy was going well and Swaziland shared in the prosperity; therefore there were no serious financial problems forcing change.

As our people moved into managerial positions, they faced a different political situation than had their expatriate predecessors. They were accountable to the people. Friction developed between the personnel of the partners. The employees of aid donors viewed the project plans as "contracts" and wanted the terms met to the letter. The Swazis, feeling pressure from the people, had a different agenda and set of priorities.

By the late 1970s it was reasonably clear that the original production targets of the Rural Development Area Program (RDAP) were not going to be achieved.

They were not achieved because of:

- * targets based on unrealistic estimates made by expatriate planners with little local experience;

- * inadequate research applicable to the Swazi farmer's situation on which to base extension programs;

- * the assumption that 100% of the small farmers, the target groups, would immediately adopt the practices being recommended;

- * inadequate marketing infrastructure and government price policies, which failed to make it profitable for small farmers to increase production as planned; lack of incentives for increased production; projects focused on production; marketing completely ignored;

- * competition in Swaziland's urban markets from foreign producers who were subsidized and had excellent market facilities;

- * cooperatives not performing as planned because they were still in their formative years and management was inexperienced;

- * large expenditures on infrastructure which should never have been expected to increase productivity in the life of the projects; and

- * lack of flexibility in the various projects, largely because they were heavily supported by aid donors and making mid-project revisions was extremely difficult and slow.

In the early 1980s Swaziland was hit by a severe drought. Production of food declined sharply and by 1983 the nation faced a food crisis.

The world-wide economic recession of the early 1980s was probably the "straw that broke the camel's back." Amid the food and economic crisis, our partners, the aid donors, became increasingly disenchanted and began to withdraw support. We were not able to reconcile major differences in perceptions and reach agreement on what had to be done. Their priorities, often established at "headquarters" in their national capitals or a location thousands of miles away, were not our priorities. Since about 50 percent of the funding for our RDAP was from foreign aid, mostly loans, we were in deep trouble.

The New Development Strategy

Early in 1985 we recognized that our agricultural development strategy must be reviewed and revised. We, Swazis, had to make decisions. We had to be responsible for our own destiny.

As the earlier RDAP came to an end, there were numerous evaluations and studies of it. We utilized these data to the fullest extent possible plus our own experience in preparing our revised strategy.

We believe we know what we, the Swazi people, want to accomplish, and we have a fairly good idea of what will and will not work in our country. We have used advisors provided by several donors, but they have assisted us, in contrast to planning and managing our programs for us.

Decisions were made and most of them implemented as our revised strategy began to take shape. Some of the initial steps were:

1) A National Farming Campaign was launched in August 1985. It stressed that meeting our basic food needs was our highest priority national development objective. The assistance of the entire farming community was enlisted.

2) Steps were taken to provide incentives to Swaziland's farmers to ensure increasing production. In 1985-86 we were approximately self-sufficient in maize and had it not been for the unusually bad weather we would have been in 1986-87 and 1987-88.

3) Confidence was restored in the cooperatives, which are the major input suppliers serving the more remote areas, by upgrading management and ensuring prudent financial policies.

4) The Ministry of Agriculture and Cooperatives began to minister to all segments of the agricultural sector, including the larger farms on Individual Tenure Land, as well as small farmers on customary tenure system. Prior to this time the Ministry had little contact with larger farmers.

5) Extension was organized using the Training & Visit approach and concentrating on food production. The new system provided greater accountability for extension workers.

7) The Ministry began to articulate more clearly the role of the government; primarily being to regulate and facilitate, and to rely on the private sector, including cooperatives, to produce goods and services.

Viabile Partnerships

Swaziland, like many countries in Africa, is a small country, and we cannot afford to have independent national institutions meeting our every need. Regional cooperative and partnerships in research, trade, pest control, animal disease control and so forth are absolute necessities.

The criteria for good development partnerships:

1) Partnerships that are willing to help us plan and implement our programs. To us, independence means making our own decisions.

2) Bonafide collaboratively prepared and managed projects and programs. I hope BIFAD and AID will give attention to making the collaborative system developed for Title XII projects work as effectively as possible. Swaziland has been fortunate to have a Title XII collaborative project. It takes special effort by all parties to make project management really collaborative, but it is worth it. Our Ministry administrators came to the United States and participated in the selection of the original team. When any of the three parties--the aid donor, the technical assistance contractor, or my Ministry--has deviated from the collaborative approach, progress was hindered. We would like to see a collaborative approach used in more aid projects and by other aid donors.

3) Partnerships that will emphasize training are our highest priority. We have made great progress in manpower development but we are still short of our requirements. We need to train more people to become irrigation specialists, veterinarians, plant protection specialists, marketing experts, research scientists and many others. We would like to upgrade the entire Ministry capability, and our training and educational institutions should give more emphasis to entrepreneurship and management.

4) Research is a fertile field for partnerships. Prior to 1980 we had little control over our research system, and it was not producing findings applicable to our small farmers. The lack of adapted research was one reason productivity did not improve in the 1970s. Our total research needs are still not being fully met. We need assistance in several fields especially in livestock.

Research partnerships can be very useful. Before and after independence expatriate advisers in African countries, and I must admit many African intelligentsia as well, believed the shortcomings of the traditional (customary) systems could be corrected only by dramatic, incisive changes in tenure. In Swaziland we established numerous pilot schemes, and in the meantime, in spite of being bombarded with advice to take drastic action, we retained the customary system largely unaltered.

In 1985, our Department of Research and Planning, in partnership with the Land Tenure Center, University of Wisconsin and with AID, launched a major research effort to clarify tenure issues in order to guide future policy properly.

The research findings are surprising to many. The traditional tenure system was not found to be a serious constraint to increasing productivity. It needs improvement but major reforms are not necessary.

The partnership is an illustration of the type that should be encouraged:

- * We were in ultimate control, and we are under no pressure to make any particular decision.
- * Management was truly collaborative; all parties participated.
- * The research was in our country and dealt with our particular situation. The findings are relevant for us. We were not doing something based on a model elsewhere.
- * Our partners were not trying to sell any specific ideological, social, economic or political system.
- * The partners provided what we lacked, and our Department of Research and Planning was strengthened.
- * The partnership provided access to useful experience and data we did not have; namely what was happening in other African countries.
- * Our long-term commitment (recurrent cost) was within our means.
- * The partners stayed until the job was done.

5) Partners must stay with us long enough to get the job done. Of course, aid donors have the right to change policies, but they should not do so at the cost of disruption to the development process for their partners.

In conclusion, development partnership must support our strategy, which operates within the framework of our National Development Plan and policies. We rely on market forces to guide the economy and my Ministry emphasizes facilitating activities in the private sector.

We have not found the correct prescription for partnerships in all areas where we need them and could use assistance to advantage, but we should keep on trying because of the great potential not just in my country but for all of Africa.

ASIAN DEVELOPMENT: STAYING THE COURSE

Robert D. Havener

Asia, as we read about it in the popular press, is a region of opportunity, where aggressive trade, hard work and capitalism have brought revitalized prosperity during the past 40 years. During that time Japan, Korea and Taiwan have become some of the world's most important cash customers for U. S. farm goods and among our most aggressive competitors in international trade in manufactured goods.

The massive food needs of the poor in Indonesia, Pakistan, India and Bangladesh have increasingly been met by people in these countries assimilating modern farm technology and plant genetic improvements into their own agricultural production systems.

And while the record is less than perfect, the developed nations of the world have seriously tried to work together in helping those poorer Asian countries improve their technological and scientific skills. Modern medicine and outside assistance have helped alleviate a portion of the human misery accompanying Asian poverty.

Economically, Asian nations such as China have moved toward more individual decision-making and greater freedom to help meet their people's basic needs for education, food and shelter.

Overall--while there are still pockets of social unrest and possibilities for political upheaval--today's Asia seems about as stable as can be expected of a vast geopolitical area containing people of diverse cultures, religious beliefs and social needs.

So then, are the problems of Asia somehow "fixed"? Has the need for outside development assistance ended?

The answer is emphatic: "No!"

By some estimates there are at least a half-billion poor, hungry and malnourished people living in Asia today.

If current trends persist that figure will reach three-quarters of a billion people by the year 2000.

And in the face of these pressures, recent gains in per capita food production will prove difficult to sustain as we move into the 21st century.

The agricultural base in Asia is eroding, both literally and figuratively. Water-logging and salinity continue to take formerly fertile land out of production. The soils are often acid or poorly drained and saline. Or they are eroded, leached of nutrients and low in organic matter. The slopes are too steep to permit sustained cultivation without extensive terracing or other costly soil conservation measures.

Uncontrolled village sprawl consumes land that once grew fodder and food crops.

Upland watersheds are being decimated to produce fuel and fodder, both for sustenance and sale.

The rural poor and landless, the so-called marginal people, seek out steep slopes and marginal lands to cultivate to produce their food and market commodities.

They move onto the land no one else cares about because it has so little value and, in their drive for the most meager survival, often cause the land's productivity to erode even further.

Thus, despite the appearance of lush, well-watered forest lands in many parts of Asia, those lands--at current agricultural prices and levels of technology--have limited potential for sustained food production.

But just as over-optimism is a danger when considering the brighter side of Asia, pessimism can also mislead us when contemplating the Asia of the years ahead.

There is certainly a multitude of problems facing Asia, but let us not forget the resiliency and cultural imperative of the Asian people in overcoming their own difficulties.

Forty years ago Japan was a defeated nation. Taiwan was still called Formosa and was a struggling island of homeless refugees.

Thirty years ago, in the 1950s, Korea was recovering from a bloody combat, with its people hungry and their farms devastated.

Twenty years ago, Hong Kong's streets served as homes for thousands of desperate people. The economic boom that today challenges the comparative manufacturing advantage of Japan and the West, was just beginning.

According to current conservative estimates, in the next 12 years Asia must find a way to accommodate another India--that is, an additional 750 million people--and to do so in a way that will still conserve the resource base needed to provide a meaningful life for 3.5 billion citizens of the region.

To achieve this goal is a monumental challenge. One that must be accomplished largely by Asians, in Asia--and within the context of the many sovereign states that now exist.

We also have to remember that the challenge is not just a "pile of food" problem. Hunger, as it exists in today's reality, is primarily an income problem. Hungry people are people who have little money and limited ways of earning more.

Many will migrate to urban areas to seek employment and a more promising life. But during the next decade most people must seek their sustenance in the countryside. For those with access to land, it will be important to provide a flow of new agricultural technologies which will increase their productivity, and better markets that will utilize their products at reasonable prices and supply their inputs, including credit, when and where needed.

For the landless poor, an expanding rural economy will be required to provide new employment opportunities in off-farm activities. Food-for-work programs can play an important role in this process. But finally in Asia, as was the case in America, training and education must play an important role in facilitating integration into the productive nonagricultural labor force.

This is a disturbing picture, both in a humanitarian sense and in the sense of wasted human resources.

To improve upon this bleak scenario for Asia's "invisible" poor, the developed nations of Asia and the West must work together more efficiently than ever before to speed the process of basic agricultural development within the region.

This will, more than anything else we can do, help ease more Asians into the mainstream of economic activity and world trade. Only then will the vast numbers of people in Asia enjoy a better quality of life and be transformed into profitable markets for U. S. products.

The Base

Fortunately, while most of the productive Asian land mass is already in use, the region has been blessed with relatively abundant rainfall and large areas of fertile soil. It is populated by people with a strong sense of community and survival.

Although frequently more geared to maintaining the status quo than serving as flagships to the future, essential educational and administrative structures are largely in place. These institutions do buffer and support the societies of Asia and offer a foundation on which to build.

During the past 40 years, which comprise the modern history of most developing Asian nations, tremendous strides have been taken in industrial modernization, infrastructure and capital formation, and the application of science in agricultural production.

New, more-productive crop varieties, irrigation, fertilizers and machinery have already been added to the agricultural production process.

Without the sometimes maligned Asian "Green Revolution," the human condition there over the past decade would have made the recent tragic famines of Ethiopia and Sudan seem tolerable by contrast.

Each year, the additional production from those modern inputs provide food for more people in Asia than now live on the entire African continent!

But from recent data it appears that the maximum potential area under high-yielding cereal varieties has nearly been reached and that the current genetic potential for increased productivity has largely been exploited by both researchers and farmers.

And despite the long-term promise of biotechnology as a new research and development tool, there do not appear to be imminent new miracles on the scientific horizon which will dramatically increase the biological potential of major cultivated crops during this century.

The Task

In Asia, then, the challenge for the 1990s is to defend recent gains, and also improve the woefully poor standard of living shared by two billion out of three billion people. At the same time, agricultural and industrial productivity needs to be increased to accommodate yet an additional 750 million human beings.

The next 12 years will be crucial to that process.

Poverty and hunger, versus environmental and societal sustainability, will be all-important dimensions of that challenge.

Since the late 1940s, the U. S. government, presumably reflecting the interests of its citizens, has for both humanitarian and national security reasons followed a policy of assisting the economic, social and political development of friendly Asian nations.

It is my belief that following a spate of discussions on the future of U. S. development cooperation, this commitment will be reaffirmed. An important question is how long the normal review and recommitment process will take.

A part of the challenge will be to facilitate the review process, and to assure that in our efforts to evaluate and improve on past efforts, we do not pause so long that current institutional capacity suffers a substantial erosion of momentum and people competent to do the job.

What to Do

In thinking about what we might do to further assist Asian nations, it seems worthwhile to pause briefly to review the effectiveness of those initiatives we have employed during the past 40 years.

The areas in which we have worked:

Capital Transfers. Clearly we accomplished large capital transfers through multilateral organizations such as the World Bank, the International Monetary Fund, and various arms of the United Nations; through private institutions and businesses; and direct bilateral arrangements.

A quick look at the difficulties associated with Third World debt today tells us that we occasionally misjudged the value of those capital transfers or that, because of mismanagement or changing circumstances, their payoff was frequently less than planned. New capital transfers between developed and developing economies will be required, but clearly the terms and uses of such capital must be more favorable if the quantities are to be maintained and desired results achieved.

Family Planning Assistance. The concept that individuals can control their own destinies through choosing the size of their families is historically an extremely recent one. The idea that there may be real benefits to limiting births can be sold only as people believe that most of their children will indeed live to reach adulthood, and that fewer but better-educated children can provide a superior social security net for their aging parents.

Unfortunately, it is among the world's poorest people that the concept of true family planning is most difficult to communicate. But we have made tremendous strides in this effort, and most demographers now predict that somewhere in the period of 2025, the "population explosion" will be largely behind us, albeit with a global population some 70 percent to 100 percent larger than today. A continuation of socially sensitive and culturally acceptable assistance to family planning efforts will reduce the awesome dimensions of our other tasks.

Science and Technology Transfer. Overall I think we have done a good job of transferring such things as the "hard technologies"--the medical technologies, the applied research technologies, and such things as communication technology.

We now know people everywhere are quick to adopt and learn to use those technologies which can directly improve their lives.

Technology transfer, and indeed, exchange will remain an important tool and accelerator of development.

Industrial Technology Transfer. The private sector has been the prime mover in this area. That is to be expected. Building the industrial base takes massive amounts of long-term capital investment, and institutions make that type of commitment only when they project long-term financial gains from the investment.

Improved global communication and transportation will continue to bring increased commercial interaction among peoples of different nations. We are seeing this particularly between the western world and Asia. We are entering an era in which an increasing number of medium- and smaller-sized businesses will partake in the spread of industrial technology.

This transfer of technologies and knowledge will be more and more a two-way street--something that all of us working in international development need to be aware of as part of our "new reality."

Organization and Management Assistance. Our success in transferring organizational skills and management techniques has been spotty at best. Cultural imperatives and customs are frequently stronger than western concepts of "efficiency" and other measures of cost effectiveness.

We Americans are as guilty as any other nationality in thinking that our way of doing things is the "right" way. Too often this limitation in our thinking interferes when we try to intervene where improved management seems called for.

I believe we are getting better in this regard, however, particularly when we see Asian business management systems competing directly with our own--and often winning in the competition.

Again, a symbiotic relationship based on a true, two-way flow of information will benefit us all.

Sharing Cultural Values and Ideologies. Discussing ideology in the context of development assistance is uncomfortable for many of us, but it is an area that we have to put into perspective if we mean to hold a fruitful dialogue about the objectives, goals, and actions of future U. S. development assistance.

I personally believe it is correct to share openly our own values with other people as we assist them on the road to their own self-determination. I also believe that it is honorable to defend our nation's values against those who would destroy them.

At what point this sharing and defense of American values becomes unwanted interference, particularly in the development assistance process, warrants careful consideration in setting and pursuing broader humanitarian and security goals.

My point is that as we work together to determine the best path for future U. S. development assistance, that path, to be supported politically, will have to be in concurrence with both national interests and humanitarian principles. Certainly, in the past 40 years, our greatest successes have come when we have made our best efforts to blend these two factors. This no doubt will continue to be the case.

Agricultural Technology Transfer. Coming more directly to the area of our own greatest involvement, I believe that new technologies will remain vitally important for enhancing the contribution of the agricultural sector to general economic development and to stem environmental degradation. There is a major role here for both U. S. universities and the private sector in developing and disseminating new science-based technologies. The International Agricultural Research Centers and other centers supported by the Consultative Group on International Agricultural Research will remain vital links in that development chain.

I also believe that we need to find ways to involve the private voluntary organizations, nongovernmental organizations, and private enterprise more productively. These are certainly not new thoughts, but at Winrock we are attempting to address this area in new ways. Given the new emphasis on these organizations all of us in the development process should review the experience of the past 40 years and honestly appraise why these organizations have not been better utilized, and where their relative strengths and weaknesses lie.

Education and Training. The long and largely successful involvement of U. S. universities in developing counterpart institutions in the Third World is well known if not well understood. Many relatively well-funded, staffed, and managed teaching institutions have been built. Adding effective research and extension dimensions to these largely educational institutions has proven difficult in foreign settings but, where the bureaucratic environment is not overly hostile, the model has proven successful.

In my view, we have done very well at assisting in educating and training people at the higher levels of education in many emerging nations. We have done less well in helping solve the problems of mass illiteracy, probably because of both the scope of the problem and cultural differences between ourselves and those to be educated.

To meet the challenges of educating and training the large number of new citizens will require a major increase in the

quantity and quality of educational institutions in the Third World. The U. S. university community constitutes virtually the only resource base capable of addressing significantly the challenge of assisting the process. But a continuous flow of federal funds will be required if our universities are to be mobilized to meet the challenge.

Provided funds are available, I have no doubt that the U. S. university system can be of great assistance: in educating people, building systems to educate people, and doing research to generate appropriate technologies in emerging nations.

U. S. universities will also continue to be called upon to provide highly specialized expertise as needed and wanted in the developing world.

A key point, however, is that this will increasingly be a two-way flow of information and assistance. We have much to learn from Asian scientists. Scientific research done in Indonesia or India is equally as valid as research done in California or Illinois.

Aid Versus Trade. "Give us trade not aid" has been a clarion cry of many Third World politicians and economists in recent years. In fact both are important. Clearly we should continue to negotiate trade agreements which are equitable and take into account our broader developmental objectives in Asia. We also need to recognize and convince our domestic audiences that only as the productivity and incomes of people in Third World countries increase can we sustain our own export expansion. To become sustained importers, other countries must also have sustained exports. And there will be tradeoffs, sometimes painful, both domestically and internationally.

Building Partnerships. Building partnerships has always been important to the success of most voluntary human endeavors. In the future it appears to me that four types of partnerships for development will pay particularly high rates of return.

Since the creation of the United Nations and its array of specialized agencies, the United States has been a major, if sometime begrudging, contributor to multilateral global and regional development assistance agencies. The need for and importance of these agencies, in Asia as elsewhere, will likely continue to grow in the future. While we can no longer dominate their agendas it will be important that the U. S. government find ways to continue to play a useful leadership role in their programs, funding, and management. Identifying like-minded donor partners who will coordinate their efforts to improve those organizations will be important to their future and ours.

Direct bilateral development assistance will continue to play a crucial role in assisting developing countries and achieving U. S. objectives. Recognizing our limited resources compared to the size of the opportunity, better coordination of

planning and effort with donor partners could have very high synergistic impact.

Earlier I mentioned the important role which the U. S. universities can play in the Third World development process. Here, too, there is much to be gained by forging new partnerships. NGOs and PVOs such as Winrock International can and perhaps should provide the long-term overseas resident staff. Increasingly these positions will call for knowledgeable generalists who can facilitate linkages and manage activities effectively. Shorter term specialists will be more specialized and will need to be on the cutting edge of their respective subject matter areas. In addition to the participation of universities, many of the relevant skills may be most developed in the private sector. Such partnerships, even at the project level, may prove to be most productive for all concerned--particularly our target beneficiaries.

Finally but perhaps most importantly is the partnership between scientists and educators in the developing countries of Asia and those in the United States.

I find it incongruous that just when many of our colleagues in Third World countries have advanced to the point where they really have many important contributions to make to a dialogue, we reclassify them to AID-graduate status and no longer provide the modest marginal funding necessary to capitalize on our investment. Certainly the socialist countries and many of the developed market economies have little hesitation in providing funds to maintain such a dialogue. I understand the 1989 Japanese development assistance budget to India will far exceed that of the United States. The idea behind it may be aid with trade but they no doubt will be swapping ideas and technologies well.

Conclusion

In Asia, then, the development challenge for the 1990s remains much the same. The key questions are: 1) How to provide basic sustenance and employment opportunities to ever-larger numbers of rural and urban poor; and 2) How to do so while containing the long-term degradation of the environmental base, preserving it for future generations.

Fortunately, because of past investments, ours and theirs, the Asians as a whole are better able than ever before to provide much of the required capital, talent, technology, and institutional capability themselves. But throughout much of Asia on a per-capita basis, they and their governments remain poor and will benefit greatly from intelligent assistance. We have much to gain both directly and indirectly from being full partners in the process.

Much of what we have done in the past was, in fact, useful and most of it, albeit with needed modifications, will be relevant in the future.

There is no question that we should take the time necessary to evaluate more carefully the nature of the things we have been doing and to make the needed modifications both in content and in the implementing agencies. But we must move quickly and decisively so that the bureaucratic capital which has been built over the years is not allowed to dissipate.

We must seek new partners and new partnerships, for neither our wealth nor our will is large enough to meet the magnitude of the challenge alone.

And above all, we must be willing to stay the course.

- - -

Rapporteur

Francille Firebaugh
Cornell University

Bob Havener presented a provocative paper on the challenges in Asia today: How to provide basic sustenance and employment opportunities to ever increasing numbers of rural and urban poor; and how to do so while containing the long-term degradation of the environmental base and preserving it for future generations.

The absence of new miracles on the scientific horizon for increasing biological potential of major, cultivated crops raises questions about the future directions of research, Havener pointed out. Eroding of the agriculture base by increasing salination and water-logging of soil and denuding of watersheds for fuel and slash-and-burn subsistence crops, threaten gains in per-capita food production in the Green Revolution.

Yet the record of resilience of the Asian people illustrated by the progress of Japan, Formosa and Korea, and recently China, augur well for the future of Asia in overcoming the problems. Continued assistance in institutional strengthening and in human capital development with aid/trade partnership arrangements involving U. S. universities offers good investment possibilities for the United States.

Among the issues discussed following the presentation were:

* Policies affecting growth through development within Asia and the United States. A broader definition is needed of policy concerns, international markets, foreign exchange adjustments, as well as distribution of land and resources.

* Understanding better the processes of decision-making and finding ways to strengthen the attention to capacity-building and the role of the U. S. universities.

* Conditionality in moving toward more mature relationships. Policy dialogue works best with longstanding relationships, both professional and institutional, and conditionality can be counterproductive.

* Careful attention to U. S. policies as they affect environment, sustainable agriculture and trade.

* Recognition of growing diversity within and across countries in Asia; in agro-climatic zones, in institutions, and in the pluralistic nature of Asia. The development mandate is also becoming more diverse in terms of trade and investments. The problems need to be attacked globally, not just regionally, or by country.

* Sustainability and environment--the slogan is there but not the technologies or policies, at least in Asia. Need to define research agenda for environmental degradation, more collaborative research on the environmental effects of policy changes, and find ways to encourage more private sector commitment. Need to offer viable economic alternatives to farmers on fragile lands.

The question was also raised about the degree of interest and the capacity of Title XII universities in environment and sustainability of agriculture in the tropics.

In federal/state relationships, the states are increasingly active in Asia in trade and investments. How do we in AID and BIFAD develop a coherent strategy with both state and federal governments operating in Asia? What is the role for the states? It appears to be an expanding one in which universities are establishing international trade centers and are making agreements with universities in some countries (particularly in China). What should AID's relationship be to the states? AID's analytical capacity needs to be increased, to have continuity, and to be closely related to state universities both in aid and trade.

Regarding the role of BIFAD in the 90s, BIFAD can bring groups together for dialogue--universities, PVOs, private sector, AID--to discuss issues such as science and technology related to hunger, sustainable agriculture, and the environment. BIFAD can play an important role in helping identify research agendas, in planning and executing exchange programs, in assisting with the intellectual agenda, not just with increasing university contracts. BIFAD certainly has the capacity to identify the best science and technology, and to develop new mechanisms for increasing involvement of the best universities in international programs, particularly in new partnership with Asian institutions.

In handling diversity, several ideas involved: decentralization, more use of intermediaries, increased Agency flexibility in using intermediaries, greater role in planning the capacity of AID to move resources quickly from one institution to another, different modes of development reflecting differences in the capacities of institutions, and collaboration.

New linkages need to be developed to involve the private sector and PVOs with U. S. universities for the 1990s agenda. BIFAD needs to develop modalities to assure that the best U. S. universities become involved in the development agenda. In fact, BIFAD needs to look for innovative ways that it can be more effective in representing universities to AID.

The Agency needs to reassess its role in dealing with structural adjustment programs in countries that are modernizing. These programs can do more harm than good, causing the masses of poor greater suffering and hunger and politically alienating some of our friends. AID needs to pay attention to trade and investment possibilities as well as research and application of science and technology, and to focus on building in-country policy capability in lieu of relying on policy leveraging. The United States is being squeezed out by increases in trade and investment in Asia by other donors, particularly Japan. The Agency needs to give more attention to strategy in these areas, to look more closely at trade possibilities for the United States, and ways to avoid losses of these markets. U. S. universities can be helpful to the Agency in justifying the trade possibilities.

While significant advancements have been made by Asian institutions, the ranks of professionals in the sciences are still thin. Increasing institutional capacities and human capital development should still rank high on AID's development agenda for Asia.

- - -

William Fuller, AID/Bureau for Asia and the Near East, and William F. Johnson, BIFAD staff, contributed to the above summary.

LATIN AMERICA

A. J. Coutu*

I want to specify a set of necessary conditions for the success of any strategy and action. These are to:

1) Substitute financial and technical cooperation for financial and technical assistance. Cooperation implies mutual interest and joint planning and implementation rather than unilateral initiatives on behalf of indigenous institutions;

2) Endorse vigorously the concept of donor coordination and encourage adoption by indigenous leadership;

3) Conceptualize and practice the idea of donor specialization;

4) Take actions to prioritize and develop continuity on the three challenges: hunger, sustainable agriculture and agricultural trade;

5) Integrate public and private actions; and

6) Strengthen linkages with the international agricultural science community.

Throughout Latin America, there were favorable real growth rates from 1950 to 1980. Since then, major debt and balance of payments and, among others, inflation problems have had severe consequences. In general there have been:

- * Low or declining real growth rates;
- * Lower savings rates and lower levels of capital formation. Net outflow of resources with 4 percent of output or a fourth of domestic savings per year;
- * High and increasing levels of unemployment and under employment;
- * Increasing rates of rural to urban migration;
- * Increasing proportions of the gross domestic product required to handle deficits;

- - -

*Readers interested in the references for this paper may contact the author.

* Decreases in the value of exports over imports; and, among others,

* Increases in capital flight (human and financial) to the United States and other developed countries.

This depressing set of limitations is further impacted by high population rates. The Latin American regions have made some progress on reducing population growth rates but the average is still over 2.8 percent annually.

One might be tempted to stop here and suggest that all is lost. I do not share that view, but my optimism is tempered by the reality of the negative trends since 1980.

Many recommendations for U. S. international cooperation in the 1990s have been plagued by a shopping-list mentality and an unwarranted optimism for increased funding for U. S. international cooperation. There are issues of child and maternal health, population, macro-economic policy, Africa as the special case, drugs, urban development, gender, primary and secondary education among many others. These are options that in most cases compete with hunger, sustainable agriculture and trade for limited resources.

Hunger

As many have said, hunger exists because of poverty (unemployment and low income) and food distribution problems, but fortunately not because of a lack of total world food supplies.

There is a sharp contrast between the economic demand for food and the nutritional need for food. A reduction in the poverty level will require reduced population growth rates, increased savings and rates of capital formation, increased overall employment options including regional non-farm rural employment (creating viable rural holding actions) and, among others, actions by individuals in regions and communities to commit themselves to its resolution.

Another important consideration regarding hunger involves increasing rates of urbanization and the consequent shift in the focus on hunger from rural to urban sites. As of 1985, about 56 percent of the population in Latin America resided in urban areas. With an average annual growth rate of urbanization at 3.5 percent, the level of urbanization will easily approach 65 percent in the mid-1990s.

The modest rates of industrialization and low rates of service industry growth plus declines in public employment pose special food supply problems for urban areas. This reality invites a focus on increasing the levels of marketable surpluses. It raises the question of priorities for achieving increased rates of marketable food surpluses.

The basic strategy for the resolution of hunger must be to enhance the commitment to agricultural science (technology and productivity change through research, extension and education) as contrasted to a natural resource dependent strategy (such as opening new lands, double cropping existing cultivated areas and expanding irrigation, all using existing technologies).

There are five critical components to the enhancement of a science-based strategy. They include a recognition that private and public institutional development are indispensable to a solution involving:

1) Adaptive research on priority commodities and areas of science (plant breeding, plant protection, agronomic practices, genetic resource maintenance, agricultural engineering, agro-economics and livestock sciences). This research must involve closer linkages of the national research programs with the International Agricultural Research Centers and the international agricultural science community. There must be a continuous stream of proven technological alternatives that serve the needs of those producing marketable surpluses.

2) A prioritized (commodities and locations) technology transfer system. Latin American farmers will pay for an effective transfer system that is "lean and mean" as compared to a highly non-educational one dedicated to political, bureaucratic and regulatory purposes.

3) Indigenous training, in a few select institutions, for research, transfer and educational professionals. Also a commitment to focus on science as related to educating producers, input suppliers and product marketing personnel.

Throughout Latin America there is a critical need for a small number of quality graduate educational programs and for the consolidation of university-level agricultural education in a limited number of institutions per country.

4) A rational set of agricultural policies that are market-oriented; for example, domestic prices that reflect border price opportunity costs. It is important to institutionalize further small groups within major countries and by regions that have the regulatory actions. This effort combined with enhancing the necessary data base is a priority area.

5) Involving and enhancing the effectiveness of the agricultural input and product-marketing sector. Agriculture involves between 30 percent and 50 percent of the actively employed when defined to include producers, input suppliers, product handlers and service personnel relating to agriculture. As in the case of producers, the issue of technology extends to the other three sub-sectors.

Two sets of actions relate to a successful science-dependent agricultural development strategy. One relates to necessary commitments that must be agreed upon and the other to the belief that an increase in rates of growth in the agricultural sector will deliver capital, manpower and raw materials for growth in other sectors.

The concern for commitment issues applies to Latin America and throughout the world. I focus on five such commitments for a successful science-focused strategy:

1) Concentration. Scarce human and financial resources require that each country or region prioritize its actions. Many developing countries fund "research programs" on 60 to 80 commodities and in many specialties. Most locations must critically choose 10 to 15 commodities and four to six areas of disciplinary specialization.

2) Continuity. Technology is a continuously changing process that must be adapted to agroecological sites. Similarly there must be a long-run view independent of the short-term view of political leaders.

3) Recruitment and retention. In most Latin American countries there are large numbers of so-called research, extension and education professionals. An educated guess would suggest that no more than one-fourth are necessary. What is needed is to reduce the numbers, increase the quality, and develop personnel policies, salary levels and professional opportunities required to attract and retain that critical mass.

4) Sustainability. High rates of growth in the agricultural sector should encourage continuous public financial support. The evidence is to the contrary, which suggests that private endorsement and investment are indispensable. There is little evidence to support the thesis that even a well-integrated public agricultural science system can be sustained without private sector participation and investment.

5) Mentorship. In any location, sustained agricultural growth requires that some entity be a watch-dog for problems and opportunities. In Latin America and elsewhere, public agricultural institutions are held in low esteem, profess independence, and critically attack each other. Partnership with the private sector must emerge and some "mentor" type institutions must arise.

A viable agricultural sector can contribute to marketable surpluses (declining real food prices), provide a source of capital, a stream of employable persons, a source of foreign exchange, and increasing levels of rural and industrial employment servicing agriculture. The triggers to this multi-dimensional process are science and technology.

The actions of the United States in the 1990s relating to hunger are clear.

* Demonstrate in a few South American, Central American and Caribbean nations that sustained cooperation will make a science-dependent system a real engine of growth.

* Recognize that increasing marketable surpluses, increasing urban population, decreases in real food prices, and rural prosperity are the dominant issues.

Rural poverty will not be resolved by making each small farmer and his children contributors to the market surpluses. His escape from a poverty environment is linked to migration, non-farm employment (rural and urban), and changes in educational preparedness.

This science-dependency is expected to be impacted by biotechnology. If successful, such technologies will require fewer but different resources in each sub-sector of agriculture. The critical issue is to appreciate the benefits of declining real food prices and options for growth in non-agricultural sectors.

Two additional observations on the challenge of hunger: One focuses on a mechanism to integrate public and private agricultural institutions, and the other on the realization that income distribution will remain skewed and requires continual attention.

U. S. society has pioneered in the development of private foundations that are catalytic to identifying alternative solutions and that act as complementary investors. This mechanism is a viable exportable asset. At the present time there are established and new agricultural science foundations in Latin America that represent U. S. initiatives which should be further developed.

The concern on income distribution will be a continuing issue. Thousands of rural subsistence farmers produce small quantities of marketable surplus. Many of these rural landholders will become part-time farmers, many will leave agriculture, some will participate in non-farm rural activities. Only a small fraction will continue as primary suppliers of food to an expanding urban population. The worldwide scenario of raising the expectations of this enormous group is dependent on a set of multiple actions. They include:

- 1) Growth of the agricultural sector that creates rural non-farm agricultural employment opportunities;

- 2) Growth of rural non-agricultural employment options associated with regional industrial and service industry diversification;

3) Growth in the number of commercial agricultural firms that can be competitive;

4) A focus on technical education efforts to prepare the children of these agricultural subsistence types to enter non-agricultural employment.

5) An expansion of agricultural export production and processing to provide additional rural employment opportunities;

6) The development of rural to rural migration strategies rather than rural to urban migration; and

7) Growth in rural infrastructure with an emphasis on rural electrification.

It is important to recognize that agricultural science and technological progress will not resolve the problem of small farmers. Many rural development projects with some technological components have failed to impact the small farmer problem.

There is some small prospect for an economically viable alternative agriculture with low levels of purchased inputs. There are greater prospects that a focus on commercial agriculture will offer employment options in the input and product-marketing sub-sectors of agriculture.

However, the reality is that the prime solutions to poverty are found outside the agricultural sector.

The humanitarian attitude of the United States must be encouraged. There should be participation in well-programmed food-for-work activities, in targeted maternal and child-care feeding programs, in rural holding actions that focus on self-help activities and on efforts to prepare people for non-farm related employment options.

I have focused on a number of issues and opportunities relating to hunger, and would like to conclude by making some specific recommendations on U. S. action in the 1990s:

1) An international agricultural science authority within, or external to, AID be established to cooperate with those Latin American countries truly committed to the task of implementing and improving science-based agriculture. A major mechanism is to implement the following:

- * Identify priority public or private institutions committed to agricultural science;

- * Focus on human capital formation within those institutions;

- * Develop joint programs to link indigenous and U. S. scientists;
- * Develop mechanisms, such as foundations, to sustain indigenous institutions, and also
- * Specialize in finding new mechanisms to bring U. S. expertise to focus on these issues. The mechanism must focus on mobilizing U. S. individuals committed to and involved in the development and application of agricultural science.

2) A special entity be created to support the development of private non-profit agricultural science foundations. A critical need is to build endowment through bilateral grants, debt/donation and debt/purchase, and through processes that create investment opportunities related to repatriation of the profits of U. S. multinational firms and to the generation of indigenous and U. S. gifts to agricultural science foundations.

3) The United States develop more imaginative initiatives to focus on the consequences of distortions in income distribution. The U. S. public likely will contribute to joint efforts at the resolution of poverty. A focus would be to use various instruments such as public laws (416 and 480), PVOs, food stamps, civil actions (involving the peaceful use of the military), and U. S. charity-focused foundations to address the poverty issue in both the United States and developing countries.

4) The United States join with other donors in stimulating rural agricultural and non-agricultural employment as well as refocusing technical education.

Sustainable Agriculture

In my mind, a sustainable environmental situation in Latin American agriculture, as elsewhere, relates to strategies that meet present needs without compromising the ability to meet needs in the future. The issue is further compounded in developing countries by the large numbers of the population that cannot forego present consumption needs in favor of the future production potential.

More specifically, agricultural environmental degradation in Latin America is associated with a number of actions, such as:

- 1) The devastation of tropical rainforests in the Amazon and other humid tropical areas;
- 2) The continual exploitation of scarce and highly unsuited land resources by subsistence farmers to meet immediate needs;
- 3) The resolution of poverty through a non-farm focus;

4) The expanding number of market-surplus producers who will not pay the cost of sustaining those resources that provide immediate rewards;

5) The increasing number of rural to rural migrants that join the search for a subsistence or commercial farming opportunity;

6) The lack of land policies that offer incentives to invest in sustainable productivity. The basic issues are size limits, a lack of titling, regulation of tenure share agreements, actions to encourage farm consolidation, and land prices that reflect scarcity values;

7) The lack of forest resource policies that would encourage reinvestment as contrasted to exploitation;

8) The lack of faith in and commitment to the view that pest problems can be resolved by integrated biological as contrasted to purely chemical methodologies; and

9) The substantive lack of both private and public capacity to understand, discuss, negotiate and implement even minimal actions.

Immediate growth requirements appear to take precedence over long-term environmental consequences that in many cases are global in character. There is a slow increase among developing economies in the understanding of and the responsibility for actions to minimize increased concentration of "greenhouse" gases. Further there appear to be growing concerns for water quality and quantity, salinization, timber supplies as an export and as a source of family fuel, degradation as related to tourism, and the mutuality of responsibility for and sustainability to climatic change.

All of these conditions and attitudes send particular messages for U. S. strategies and actions in the 1990s. In my opinion the critical ones relate to:

1) The reality of an enormous informational void;

2) The acceptance that much is known about conventional approaches to environmental issues and that the focus is on transferring knowledge (e.g. soil conservation options, drainage and salinity, reforestation, sanitation practices) and building indigenous capacities to implement known technologies;

3) The acceptance of a responsibility to develop and disseminate further knowledge on the more basic environmental issues that have no respect for national boundaries; and

4) The acceptance that low priority is given to forgoing present consumption for future sustainability by those who are confronted by scarce means to meet present needs.

With few exceptions (such as the Southern Cone of Latin America) there is an enormous void of concern, understanding, political commitment, and institutional capacity to address the issues. Clearly the United States cannot accept the responsibility for a frontal attack on all the problems. Accordingly my recommendations for U. S. actions in the 1990s within the agricultural sector of Latin America are as follows:

1) U. S. technical efforts focus on enhancing knowledge of the basic research issues, global consequences of gas emissions, the value of genetic diversity, and biological versus chemical controls that lead to viable alternatives within the region. The developing countries of Latin America do not have the scientists and cannot pay for the necessary basic research. The preferred mode would be to link U. S. scientists and a few indigenous scientists in joint efforts to acquire additional knowledge.

2) Complementary to the basic research need is the requirement to identify and implement actions based on the existing body of knowledge. This implies that the United States should focus on helping to build very selective environmentally-oriented institutions. These entities would enhance public awareness of environmental issues, disseminate existing information, train human resources and assist in building individual as well as community commitment to attack environmental degradation.

Further, there are opportunities to address environmental degradation associated with the amelioration of poor income distribution. The recommended focus would be on organic farming options or alternative agriculture pursued by supporting private voluntary organizations in those indigenous communities that sense a need but are without technical and financial resources.

3) Coordinate indigenous government and donor actions on regional service and industrial development activities that further enhance employment, as a major weapon to change present attitudes toward sustainable agriculture.

4) Devise and support a well-designed reforestation initiative to do research, train personnel, and among other actions remove marginal lands from cultivation and relocate rural land holders.

Trade

It appears that more free and fair agricultural trade may become a reality between now and the year 2000. The United States may pursue a decoupling policy. The European Economic Community (EEC) will likely not continue excessive subsidies to preserve European agriculture. Leading Asian nations may relax protectionist policies. Developing countries may moderate some extreme food security measures.

The implications of such actions for Latin America are not well understood. As artificial prices are eliminated or substantially reduced, each country in Latin America must critically assess the implications. The likely consequences are an increase in world prices, regional specialization of in-country trade, and greater specialization on international trade.

In the United States, a decoupling policy is likely to prevail. The policy would involve governmental withdrawal from any subsidy (on inputs, exports, domestic supply control, and prices) in exchange for an income transfer equivalent to the value of previous governmental programs on an individual's gross farm income. The agricultural producer would receive an income transfer (impacting individuals and rural enterprises) and be free to choose what to produce, and would receive competitive domestic and world prices.

In the case of the EEC, the issue is to reduce substantially governmental subsidies (presently 50 percent to 75 percent of the EEC budget) and permit market forces to dictate how agricultural resources are allocated. The issue also relates to 1992 expectations on a truly common market for all EEC countries. The implications of a United States of Europe are difficult to estimate. In general terms one would expect long-term declines in real food prices, production specialization, and an increase in many food imports.

If more free and fair trade policies are developed in the Pacific Rim and Asian nations, there should be increases in food imports and long-term tendencies toward reduced real food prices. The Japanese government and consumers spent over \$60 billion per year in subsidies and inflated food prices.

In all cases (U.S., EEC, and Japan) there are enormous pressures to reduce government expenditures to respective agricultural sectors. Clearly, the implications for developing countries relate to who will become major suppliers and what commodities will be the primary ingredients of increased international trade in food.

The scenarios are numerous and dependent on difficult decisions and the phasing of actions in many countries. There will be a reshaping of world agriculture, many rural areas in Latin America will be affected, and governmental tax revenues from agriculture will increase. From my perspective some scenarios are as follows:

- 1) Latin America will concentrate on commodities of comparative production advantage. Clearly the thrust will continue on non-competitive traditional crops such as coffee, chocolate, tea, bananas, and most significantly on sugar and palm oils. There may also be a potential for wheat, corn, rice, soybeans, selected fibers, fresh and processed vegetables.

2) A major thrust on these traditional commodities will dwarf the more recent U. S. focus on non-trationals. One would suspect that U. S. and EEC producers will improve efficiency in commodities with high income elasticities (fruits, vegetables and diet-related specialties). Also that many more U. S. and EEC producers will leave agriculture, which will impact basic food and feed grains. This latter action may permit increased non-U. S., EEC, and Asian Rim production in poultry, swine and beef. The issue is likely to be specialization in traditional food products as contrasted to a search for non-trationals.

3) Changes in relative prices of labor, capital and land along with climatic conditions will favor Latin American specialization. The abundant supply of labor and year-round climatic conditions in many Latin American countries will express themselves in shifting sources of supply that focus on capturing comparative advantages. Clearly, technology will be readily transferable and the key ingredient will be production and marketing managerial capacities.

These possible strategies portend major agricultural resource-use adjustments. The 1990s may be too early for the interplay of many factors but signals should be apparent in that decade.

This leads to a possible set of actions for U. S. technical and financial cooperation, particularly in Latin America. With respect to agricultural trade some U.S. cooperative actions are:

1) The United States lead, by various actions, in promoting the idea that more free and fair agricultural trade will benefit the creation of an abundant and lower-cost food supply system.

2) The United States participate in the creation of knowledge on the consequences of trade policies for respective Latin American countries. The central focus must be on creating substantive analytical capacities to choose indigenous actions on technology transfer, product specialization and product marketing adjustments required to achieve national and regional advantages.

3) U. S. cooperation focus on international capital markets as well as commodity markets to assist in the reallocation of Latin American regional resources to produce abundant and lower-cost food supplies. The U. S. focus to assist Latin America in developing its comparative advantage in basic foods will create extremely difficult political choices but the impact can be enormous in employment creation and as a contributor to resolution of poverty. The more rational allocation of the world's food suppliers may be more than the equivalent to industrialization as the major force for resolving distorted income distributions.

4) The United States continue to support increased rates of growth in Latin American agricultural sectors as a stimulus to increases in U. S. agricultural exports.

Summary

There are relationships among the three issues of hunger, sustainable agriculture and trade. These relationships emerge in identifying the problems, characterizing a U. S. strategy, and in selecting U. S. actions.

The first basic suggestion in this paper is that support for agricultural science should dominate U. S. actions and will impact hunger, sustainable agriculture and trade. A second basic suggestion is that poverty is a prime cause of hunger and environmental degradation, and its resolution will require actions to increase rural and urban employment in selected agricultural but mostly in non-agricultural areas.

An expanded and specialized U. S. focus on technical and financial international cooperation in agricultural science is the top priority.

A second priority is for the United States to catalyze a specialized donor effort on increasing industrial and service employment in rural and urban areas with a regional orientation.

- - -

Rapporteur

John Nicholaides
University of Illinois

The discussion following the above talk centered on these issues:

Martin Paniero, Director General, Inter-American Institute for Cooperation on Agriculture:

Agriculture will have to play a much more important role in the next 20 to 30 years than it has in the past 20-to-30 years in Latin America.

The emphasis will not be on cheap food but rather on how to increase prices to give a better profit, increase productivity, and thereby make a positive impact.

Sustainability is a problem and concern mainly of the rich countries. The rationale for this opinion is that poor countries will not be able to do much about it. Much of the costs related to sustainability will have to be borne by the rich countries, particularly the United States.

On trade issues, optimism that long-term structural adjustments will bring about the liberalization needed to lead the general economy out of the doldrums. One of the few areas where the United States has a common view with most of Latin America. The opening of Latin American trade will enable Latin America to gain much of the market share that it has lost over the past few years. An export base and export-led agricultural sector in Latin America is the key.

Aid and trade should be closely related in discussions. The main problem in Latin America is the deterioration of the human capital base.

Jack Vaughn, Conservation International:

Three topics that might have been stressed more:

* Agrarian reform. This issue is no longer addressed, but the problems are still there. Coutu suggested in his paper that it was perhaps time to look at consolidating some of the smallholder resources rather than continually making these small.

* The loss of top soil. Each year 25 billion tons of top soil are lost. That is five tons per person per year. The loss of productivity is closely related to top soil loss; certainly, environmental degradation and poverty stem from that.

* Not enough emphasis on the failure of agricultural extension in Latin America.

Woods Thomas, Purdue University:

Agree with the concept of technical cooperation and not technical assistance that Coutu stressed in his paper.

Will have to work on unconventional things--a major break with the small-farmer themes with which we have been working. The continuity issue stressed by Coutu would be difficult for many Latin American countries.

The constraints in getting long-term commitment from our scientists to work collaboratively with Latin American scientists is a major issue.

In other discussion, these points were made:

Graduate level countries represent a large chunk of the countries in Latin America, and a large chunk of agriculture. Current U. S. policy is that we should not be involved with these, which means both the United States and the Latin American countries are being short-changed. Perhaps there is need to look

at some type of bi-national/multi-national development foundation to be the catalyst.

In real dollar terms, AID's budget for agriculture and rural development is 37 percent less today than it was 10 years ago.

Consider the role of the International Agricultural Research Centers in Latin America as we look to the 1990s.

The Collaborative Research Support Program (CRSP) could be good for many new activities in Latin America. Different delivery modes need to be considered for the 90s; the CRSP model is a good one to begin with.

A major comparative advantage held by people in the national agricultural research institutions: they know the problems.

U. S. universities are prepared to do more today than in the past. The resources are much broader than agriculture but ways need to be found to tap these resources. Anything done in agriculture will put pressure in some instances on the natural resource base. Work must be done within this framework.

One of the most detrimental developments in Central America has been the U. S. demand for red meat. This has produced great clearing of forested areas for pastures, and resulted in extreme environmental deterioration.

Perhaps need to be a little more realistic in our expectations on trade policies, reflecting a little less optimism than Coutu and others expressed.

FOOD, SUSTAINABLE AGRICULTURE AND TRADE IN THE MIDDLE EAST

Elias H. Tuma*

The problem of food in the Middle East has been topical for the last four decades. We are not closer to a viable solution now than we were in the 1950s. But the potential for overcoming the problem should now be brighter, given the technical knowledge and the quality of human capital available today compared with yesterday.

The decade of the 1960s was called the first decade of development. Agriculture was supposed to reach high levels of development, especially in the aftermath of the various agrarian reform programs initiated following World War II.

The decade of the 1970s was mostly a decade of disappointment, especially from the standpoint of development, industrialization, productivity, and living conditions in Third World countries.

The decade of the 1980s may be considered the decade of reevaluation and reassessment. It is time to find out what has happened and whether the objectives, though not realized, are still realizable.

One would hope that the decade of the 1990s will turn out to be the decade of rejuvenation and takeoff--for economic development in general and for agriculture in particular. This assessment applies to most developing countries and certainly to the Middle East in spite of the oil price revolution and the relatively high investment expenditure in that region. The Middle East in this study includes member countries of the Arab League, Iran, and Israel.

Studies of Middle East agriculture agree on several points:

1) Agricultural output has experienced a wide range of growth rates during the past two decades, from negative rates up to eight percent per year between 1980 and 1986. However, the major agricultural producers did not enjoy such high rates. Syria actually suffered a decline in that period.

2) The growth rates of agricultural output per capita have been much less than the total growth rates and in many countries they have been negative, which suggests that the problem of population growth is a major part of the food security problem.

- - -
Readers interested in a longer version of this paper with supporting data and documentation may contact the author.

3) Food production has grown in recent years more than agricultural output in general, but per capita food production has made a much smaller gain since 1980, and in five countries it has declined.

4) Though food production per capita has trailed behind other growth indicators, food supply (at least in terms of calorie intake) has increased in most countries to above the minimum required for healthy living. The difference between domestic food production and food supply has obviously been imported either as purchase or as gifts.

5) Domestic agricultural production and domestic food production in the Middle East still have unrealized potentials, depending largely on technology, policy and organization of the production unit. All available estimates agree that agricultural and food production can increase substantially by the year 2000.

More widespread use of drip irrigation would bring large areas of land into cultivation. Desalination and salt-water irrigation of salt-resistant crops would greatly enhance production estimates. Joint research by Israel, Egypt, and the United States on salt-resistant wheat and barley has been underway. Experimentation at the University of California, Davis, has also been encouraging, especially in the production of wheat. Finally, there is the potential of increasing factor productivity, which seems to be the focus of attention of most estimates in the literature.

It may be argued that land and water shortage may not be the major bottleneck in agricultural development of the Middle East. Between 1970 and 1985 all but Egypt experienced increases in irrigated land, and only Syria had an increase in irrigated land but a decrease in arable land. Yet only two countries out of eight had higher growth rates for the period 1980-1985 compared to 1965-1980.

6) Even if the unrealized potentials were to be realized, food supply will remain in deficit relative to the demand for the region as a whole. Trade in food items will continue to be an important factor to assure secure food supply.

The problem therefore is how to reconcile domestic production of food with production in the rest of the economy; promote a system of sustainable agriculture; and take advantage of the international economy through trade relations to assure an "adequate" food supply in the years to come. Food supply means food available on the market from all sources, domestic and foreign.

Sustainable agriculture has been defined as agriculture characterized by "food security, a dynamic adaptability, a generation-to-generation time span, a concern for the environment and natural resource base, and varying levels of technology."

I should like to add to this definition the expectation that each agricultural output in each country should be moving in the direction of the record output realized by any other country in the region with similar resources. Another view is that sustainable agriculture would focus on reducing inputs such as fertilizers and pesticides as in organic small-scale agriculture so that agriculture would be self-sufficient or independent from toxic and other industrial inputs.

In either case it is not certain that sustainable agriculture as defined can assure food security in the Middle East independently of other sectors of the economy.

Conceptual Framework and Controversies

In dealing with food and agriculture in the Middle East it would be most productive to dwell on the positive aspects and potentials. However, certain clarifications are necessary before we can deal with the main issues:

1) It needs to be made clear whether we are concerned with available food supply, secure food supply, or with food self-sufficiency. Available food supply implies full dependence on market forces. A secure food supply may necessitate interference with the market. Food self-sufficiency implies definite intervention in the market.

I suggest that food self-sufficiency is neither feasible nor necessary on a country-by-country level, though it may be feasible on the regional level but still not necessary. The feasibility of self-sufficiency on the regional level depends on at least two conditions:

a) the ability of the countries of the region to act as a unit in the production and distribution of food commodities, which is unlikely in the foreseeable future;

b) readiness of member countries to substitute food production for other agricultural products regardless of the opportunity cost, which also is unlikely.

I suggest, therefore, that secure food supply is the most relevant and feasible objective for food policy in the Middle East.

2) It may be necessary to justify dealing with the Middle East region as a unit. Cooperation among the countries in producing, storing, trading and distributing food has been limited. Therefore secure food supply must first and foremost be a country-by-country objective, though it may be pursued within a regional context to the extent possible.

On the other hand it may be more efficient and in some situations necessary to collaborate with countries outside the

region in order to achieve food security. This is the approach I would like to emphasize in this study.

3) Agriculture exists within a context whose features may enhance or hinder agricultural production and growth. The inputs may be available, but if the context is negative the results may be less than expected. This has been a common problem in Middle East agriculture.

I suggest that we look at agriculture within a developmental context to analyze the problem of food security and agricultural sustainability. This means that agriculture will be treated as part of the macro economy and subject to macro economic policy.

4) Studies of agricultural and food production in the Middle East face several conceptual and operational controversies which tend to reduce the efficiency of the search for solutions. Most studies tend to estimate demand for food on the basis of given parameters and then proceed to manage the supply to satisfy the demand.

In a dynamic context, the parameters themselves may be subject to management and change. For example, changes in population may be induced and therefore population estimates need not be taken as a given. I suggest that reduction of population growth is as important a target or condition for food security as increasing food production.

Composition of the diet is another such given. Experts often avoid interfering with the diet because of the cultural implications. Is it not possible that consumers can learn to like a higher-yield variety or that additives can restore missing taste?

Another such limitation is the idea that peasant agriculture and the system of production in the Middle East are a way of life which should be respected by experts from other countries. It is quite likely that if the policy makers and peasants were given a clear picture of the alternatives, they would choose to deviate in favor of the better way of life they dream about: one based on higher productivity, higher incomes and a higher standard of living. Sinai peasants I have interviewed illustrate the point; they have adopted modern techniques and turned the deficit into surplus.

This policy limitation may be illustrated also by the apparent insistence in the literature on maintaining small peasant systems of production based on labor intensive subsistence farming, even though such farms have not proved to be successful either in raising incomes or in promoting development and industrialization. The only examples where such farming may have been less of a handicap is when agricultural employment was coordinated with and supplemented by non-agricultural employment such that the income of the farmer was substantially enhanced by non-agricultural incomes.

On the other hand, there is evidence that small-scale peasant agriculture tends to hinder water management, discourages weed control by pre-sowing irrigation, the use of herbicides and disciplined timing in agricultural activities, all of which require larger scale and more modern training and skill than the small peasant has.

The same applies to transfer of technology. In recent years the concept of "appropriate technology" has come into vogue, but it has been misinterpreted widely. In most cases, as popularized by Schumacher in his *SMALL IS BEAUTIFUL*, appropriate technology has come to mean that developing countries should use less advanced technology than state of the art permits in recognition of "the economic boundaries and limitations of poverty."

Backward technology has never been a successful vehicle of development. Small may be beautiful but it is not always filling. The concept of appropriate technology is useful but only if applied in a dynamic framework such that the objective will be to catch up with the state of the art within a specified timetable and according to a plan. Otherwise it tends to perpetuate poverty, backwardness and dependence.

The Development Context

The context of production, whether in agriculture or industry, consists of five components. These are the demographic, the sociopolitical, the infrastructural and the educational-technological. In an open economy, trade or the international component overlaps with all the others. These are the pillars on which the economy stands.

If these are developed and capable of providing the necessary services to the production system, production would be easy to expand. If these subcontexts are undeveloped relative to the target level of agricultural expansion, the expansion would be obstructed, slowed down or rendered too costly and inefficient.

To illustrate this interdependence:

* A population that grows at such relatively high rates as happens to be the case in most countries of the Middle East can hardly be considered neutral in trying to create sustainable agriculture or assure food supply.

* A sociopolitical framework that is unstable, favors industry over agriculture, and fails to take into consideration the desires and attitudes of the agricultural people can hardly count on cooperation of the producers or enhance agricultural development.

* An underdeveloped infrastructure which provides few roads, little communication and few of the financial and credit facilities must be an obstacle to agricultural development.

* An educational system that fails to provide the rural people with equal education, in quantity and quality, and that barely involves the farmers in experimental research and technical innovation can hardly hope to see the farmers adopt new techniques readily.

* Finally, an international trade and finance policy that puts the interests of the rural producers at the bottom of the scale of priorities can hardly be an asset in the developmental process, especially when the costs of such a policy are not offset by other benefits to the farmer.

The impact of a framework that fails to see agriculture as part of a context is cumulative. The longer the interdependence is ignored the more institutionalized and perpetuated the distortions are, and the more difficult the problem to solve becomes. This has become the fate of most systems of agriculture in the Middle East. On a macro level probably the only exception is Israel. On the micro level certain commercialized sectors of agriculture exist in each country which tend to be free from these restrictive limitations.

Policies Toward Sustainable Agriculture and the Institutionalization of Deficits

Before we look at the policies that have been current in the Middle East, it would be helpful analytically to separate policies relating to the development of agriculture from those aimed at assuring food security.

1) Agrarian reform programs have often centered around the redistribution of land into small lots to peasants rather than on creating viable systems of agriculture. In many ways, these redistribution programs have done exactly the opposite: They have helped to sustain non-viable agriculture by creating small farms that can hardly produce the income that is commensurate with the needs of a family in a growing economy. In most cases agrarian reform has served political and social purposes, which though they might have been desirable, were not fully consistent with economically sustainable agriculture.

Dam building, land reclamation and state model farming have occupied much attention and absorbed large portions of the capital allocated for agricultural development. These programs should be great assets for agriculture. But often they are under-utilized because of insufficient coordination with the rest of agriculture or the total economy to take full advantage of the new capacities created.

Finally, there has been an explosion in the number of cooperatives, mostly for marketing and credit services, rather than for production. Unfortunately the great potential of farm cooperatives in the Middle East has been virtually wasted because they do not do what ideally is expected of them.

The results of these various programs have been to sustain duality in agriculture: Commercialized, large-scale modern farms side by side with peasant-labor intensive, subsistence small farms based on backward technology and traditional methods of farming.

Another form of duality has been reflected in high-level investment in the urban economy and relative negligence of the rural economy and agriculture.

The system of duality has recently been criticized as inefficient and discriminatory against agriculture, with recommendations for a unimodal system "characterized by gradual but widespread increases in productivity by small farmers adopting innovations appropriate to their labor-abundant, capital-scarce factor proportions." The recommended unimodal approach emphasizes a production system which centers around food production and employment, or subsistence agriculture. It is not clear however how this system would make a breakthrough out of subsistence labor-intensive farming. It is not clear either how this unimodal approach would generate incentives for the work or pressures on the farmer to stimulate change and development.

More interesting and more in line with sustainability are the programs to arrest invasion of the desert, expand reforestation and conservation, and improve drainage. Algeria has pioneered in the region in fighting the invasion of the desert by reforestation and creation of tree "walls."

Libya has done some reclamation as another way of rescuing the land from the desert. Israel has made headway in reforestation. Egypt, Iraq and Iran have attempted to restore drainage systems to fight the increasing salination of the soil.

In general, however, agriculture still suffers from overgrazing, over-utilization of the land and the forests, and inadequate care for the rivers, water reservoirs and dams. As a result silt has built up, the water has been contaminated, and the soil fertility has been depleted, while overgrazing and unsupervised grazing have wiped out the shrubbery and roots and thus increased erosion.

Conservation and care for the ecology seem like luxuries these poor countries cannot afford, but nevertheless awareness is growing.

2) Programs aimed at assured food security in particular have been few around the Middle East. Most of them have been concentrated in recent years and in the oil countries. Probably

the most widespread but indirect approach intended to enhance food production is retention of the peasant farm which produces subsistence items primarily. Although there has been increasing deficit in food production, these farms have remained the backbone of food production in the Middle East.

Research programs to improve seeds, plants and animals have been carried out in various degrees of sophistication. Most of these are directed and/or financed by foreigners and not always well coordinated with the needs of the specific country or the infrastructure, especially the marketing system.

On the production side attempts have been made to grow food in greenhouses, improve yields by breeding stronger and drought-resistant varieties, or to subsidize food growing, sometimes at very high rates in order to attain what seems like an artificial level of self-sufficiency. To grow food at costs that are several times the international price may certainly increase food production, but it cannot be considered a viable way of assuring food security, unless it is recognized that the subsidy is intended as a way of redistributing incomes on the one hand, and as a temporary stimulus to agriculture on the other.

Similar attempts have been made to increase livestock production, though largely on the basis of imported feedstuff. Promising results have been realized in Syria, however, where a new rotation system has been introduced to produce feed as well as restore fertility to the soil.

Probably the most common way to assure food supply, though not necessarily food security, has been to depend on imports, to make trade agreements, and to secure aid from friends and allies whether in the form of food or of funds with which to buy food. This, of course, is the problem the Middle East countries might be trying to resolve by enhancing domestic food supply.

Until recently most countries have also implemented measures which tend to discourage food production: subsidy for agricultural export items other than food; subsidy for the urban consumer at the expense of the rural producer; and imposition of rules and regulations on the farmer which restrict decision-making, reduce incentives and lead to misallocation of resources.

As a result, food production has been given a low priority in the policies of the region, despite the proclaimed favorable policy to the contrary. The end result has been the deficit and grave insecurity of food supply. Since 1980 a new level of awareness of the need for food security seems to have prevailed.

The policies and programs described above are not unique to the Middle East nor are they inherently weak and ineffective. What may have made them weak and ineffective are the failure to implement them fully on the one hand, and the institutionalized attitudes and behaviors that sustain food supply deficit on the

other. Among these are the apparent conviction of inability to cope domestically with the problem, and the expectation of dependence on food imports as normal.

3) Vulnerability or non-sustainability of agriculture and deficit in food production may be explained in part as due to lack of resources, but also as results of policies that have been institutionalized over the last three decades.

Five major institutions may be singled out as contributing to underdevelopment and "perpetuation" of agricultural vulnerability and food supply insecurity: Land tenure, religion, government bureaucracy, education, and family structure.

The influence of these institutions is as great today as it was in the traditional society, but the traditional society has been undergoing change while those institutions have not.

The society seems to be guided or governed by what I have called a philosophy of Indecision, Procrastination, and Indifference (IPI), which leads to frustrated or lack of entrepreneurship, low incentives, low productivity, low incomes, low savings, and hence slow development. It is important to note, however, that these institutionalized patterns of behavior are not without benefit to certain segments of society. In fact the beneficiaries happen to be among the leading decision-makers in economic matters, which of course help to entrench those behavior patterns.

To illustrate, I shall mention only land tenure as an IPI-sustaining institution, especially in Egypt. Agrarian reform was introduced in most countries of the region in the post World War II period. Though many peasants have become owners, the peasant is still treated as a dependent who cannot make decisions. He is manipulated by the farm cooperative, by the bank, by the government representative, by his former landlord, or by the largest landlord in the village or community, who might also represent political power.

This surviving attitude which is associated with the land tenure system has apparently been carried over to other functions the rural worker moves into. He still finds little room for initiative, little relationship between effort and reward, and much pressure to remain dependent since most decisions in the Middle East are centralized, and like the peasant, the worker must follow instructions.

Other institutions are equally important in perpetuating IPI behavior in various degrees of effectiveness. In the Middle East education has served to sustain vulnerability and dependence by helping to socialize the last two generations in accommodating themselves to the defective context and the resulting underdevelopment in agriculture and elsewhere as well as to the deficit in food production and dependence on imports.

These institutionalized obstacles to development go a long way toward explaining why after at least two decades of attempted development in agriculture, most countries of the Middle East are still lagging behind in yield, labor productivity, rural incomes and food self-sufficiency or food security.

The disappointment of the decade of the 1970s may be repeated for the 1980s. However, there is no reason why the same should be expected in the 1990s. The people of the Middle East are fully capable of turning the tide and making a breakthrough toward sustainable agriculture and food security, if not through domestic production, it may be achieved by enhanced exports and trade relations with other countries within and outside the region.

The 1990s: Rejuvenation and What It Takes

It would be presumptuous and misleading to give a prescription of change that would fit all countries of the Middle East, especially in view of my argument that the region can hardly be expected to act as a unit. Furthermore, the individual countries differ widely in terms of their endowments and resources.

Certain general ideas may be considered as points of departure in looking at prospective change in the 1990s:

1) Food supply security is possible at a relatively high cost by substituting food production for non-food agricultural production. If Egypt were to replace cotton cultivation with wheat or rice, food security would be attained. Such a policy, however, cannot be recommended except in periods of crises.

2) Changes in agriculture should come as a package and touch on all aspects of the development context. For example, the introduction of a new technique would require capital (credit), a farm advisor (extension service), purchase of inputs and sale of products (marketing), and if the new technique requires more land or equipment than the small farmer has, participation of other farmers becomes necessary (cooperatives). Furthermore, if the technique requires long-term investment, the form of tenure would make a difference, and if it is new and in any way radical, permission from the government and cooperation of the administration become necessary or indispensable. If any of these requirements is not satisfied, the new technique will be difficult to introduce.

Sustainable agriculture in the Middle East requires new techniques, and the new techniques require a favorable context; hence the need to introduce change as a package.

3) To reduce the gap between agriculture and manufacturing, it is necessary to coordinate agricultural change with development in those other sectors and with other components of

the context, and thus reduce the gap in living conditions, skills and education, real wages, and mobility.

The farmer in a developed economy can move from a farm job into an urban skilled job with little difficulty and no disadvantage in remuneration. Not so in the Middle East. To make this happen, the policy emphasis should be changed from yield of the land unit to productivity and earnings of labor. The policy measures should be tailored to allow the farmer and farm worker to earn incomes relatively comparable with those of their counterparts in the non-agricultural occupations. This may require more land per farm worker, more capital per farm enterprise, more advanced machinery, more education for the farmer and farm worker, and less bias against agriculture than has been common so far.

Three types of economic policies are relevant in this respect to: a) enlarge the farm unit to promote economies of scale or at least to avoid diseconomies of small scale; b) advance farm technology to increase labor productivity, which requires adjusting the land/labor ratio upward; and c) commercialize agriculture whether food or non-food production.

History shows that no country has managed to create viable agriculture without these three conditions.

4) Change in agriculture must focus on a target, with a timetable and details of the implementation procedure.

Many projects in the Middle East are treated as if they existed in a vacuum in terms of time horizon, linkages and results. Time is not costless if sustainable agriculture is the target a decade hence, since change and realization of the target are cumulative and any slowdown is bound to hinder realizing the final objectives.

The IPI philosophy must be discarded if agriculture (and other sectors of the economy) is to become viable and sustainable.

5) Planning agricultural development should be on a national or country-by-country basis, though the door should remain open to take advantage of regional or subregional opportunities. The ideal policy would be for countries with surplus labor to join with the land-rich countries and with the capital-glutted countries to create highly developed agriculture on a permanent basis for all of them.

The reality does not seem promising to pursue that ideal. It may be noted that the developed countries have always benefitted from population transfer on a large scale. However, if permanent migration or population transfer cannot be supported in the Middle East, the next best alternative would be to pool resources through temporary mobility of inputs and outputs or by allowing labor migration as guest workers, and free trade within

the region. This simply is continuation of present policies but with more freedom of mobility and more emphasis on agriculture than has been the case.

6) Investment of oil resources in agricultural and food production in countries where land is available could be more lucrative and profitable than investment in more traditional outlets in the developed economies. This may be accomplished on bilateral basis, purely as business agreements. Another version of this cooperation would be to invest in developing water resources, including desalination and breeding salt-resistant crop varieties.

7) A campaign to reduce natural population growth is indispensable in all countries of the Middle East regardless of wealth and resources. Countries that need more people should welcome immigrants from other countries of the region on a permanent basis and encourage them to become citizens. This would be their least costly way of acquiring human capital and of building human and economic bridges within the region.

8) Investment in self-reliance in the Middle East is probably the most promising but least encouraged policy. Most solutions seem to be proposed by and entrusted to outside agencies. Research teams are usually managed by outsiders, who are not always better qualified than the local experts. Local products, sometimes justly, are ignored in favor of imported products. The Khawaga or foreign expert complex is still predominant and as detrimental as ever.

This does not mean that help from and cooperation with foreign experts should not be promoted. On the contrary, it means that such cooperation should be coordinated so that the local experts would be the majority partner in the enterprise. It also means that the local partners would be involved in the partnership for development from the time of its inception to its full implementation.

(BIFAD would render a great service by holding symposia in which American and foreign experts meet as equal partners, in number and responsibility, to formulate projects and establish guidelines for partnerships in development as well as for the individual projects they may be working on, with as little political intervention as possible.)

9) The Middle East countries should accept the idea that while food self-sufficiency is neither feasible nor preferable, food supply security is feasible and necessary. Food security can be assured only if development of the other sectors of the economy is assured. Agriculture cannot produce enough exportable items to finance food imports. Thus the solution to the food problem lies more in development of industry and manufacturing than in dependence on domestic or regional agriculture. Domestic or regional food production should be encouraged in the long run only to the point at which such production can be justified

economically. Beyond that point resources should be redirected to the production of non-food exportable products to earn the necessary foreign exchange to finance imports.

There are arguments that dependence on outside sources entails political risks, depending on the monopoly or oligopoly power of the foreign suppliers. FAO has computed a table of "vulnerability" scores for commodities imported by the Arab countries, with the implication that steps may be taken to hedge against the risk of depending on foreign supply of the more vulnerable items.

Such calculations and policy recommendations would be helpful if regional cooperation can be guaranteed. In the absence of such guarantees, the best policy, next to the development of agriculture and industry, would be to try to gain a competitive edge in the production of certain "strategic" commodities, conclude bilateral or multilateral agreements with suppliers of the vulnerable items, and establish a food reserve fund to combat fluctuations in food supply that are bound to occur for one reason or another.

10) Finally, even if all the above steps were successfully implemented and food supply became ample, food security would still require a guarantee that food will reach the communities that need it and that all families have enough purchasing power to secure the food. Such can be assured only by guaranteeing full employment and a minimum income for all families--the topic for another forum.

Summary and Conclusions

There is no doubt that the oil revenue boom has had an impact on the Middle East and North African economies, including agriculture. But it would be misleading to suggest that the continuing food deficit and agricultural underdevelopment were results of the relative abundance of foreign exchange.

Our analysis suggests that the problems were inherent in the sustained peasant agriculture; and the emphasis on small-scale, labor-intensive cultivation with backward technology, and on yield per unit of land rather than on per unit of labor.

The bias against agriculture has condemned those who stay in agriculture to relatively low education and skills, relatively low standards of living, underemployment or disguised unemployment, and little hope of improvement unless they leave and go to town as many have done.

The problem seems to have been aggravated by the unabated high growth of population which has absorbed most of the improvements in agriculture and food production, so that the growth per capita output of both food and non-food agricultural products has been undermined.

This situation need not remain the same in the 1990s. The potential for improvement is there and can be realized if policy changes are introduced and implemented on time.

The recommended policies may be summarized as follows:

Efforts should be directed to both demand and supply. On the demand side it is indispensable to promote population control, modify the composition of the food basket by doctoring both taste and the diet, and guarantee full employment and minimum income so that the purchasing power of the family would be guaranteed to assure nutrition for all.

On the supply side it is necessary to promote development of agriculture in general with emphasis on the increase of productivity of labor as well as of land yield. It is also economically rational to enlarge the scale of farming at least enough to guarantee a minimum family income comparable to non-agricultural family income.

To increase productivity of labor, it is imperative to adopt new technologies and increase labor skill and hence productivity. While this may cause displacement of labor, the burden of surplus labor must not be borne by agriculture alone. A way out would be to coordinate agricultural development with other sectors of the economy, especially industry and manufacturing. However, a major absorber of labor may be the building of the infrastructure which cries for improvement in all countries of the Middle East.

On the supply side, a major effort may be expended to conserve land and rescue it from the desert, erosion or salinity. Reforestation and conservation are obvious targets. Expenditures on desalination and salt-resistant crops would pay off. More emphasis on drip irrigation and water management would be fruitful. Dam building and land reclamation, which have been under attack by certain schools of thought, have been among the most productive investments in developed countries. In addition to the returns in agricultural production and power generation, they create an atmosphere of dynamism, ambition and high expectations and thus incentives.

These changes would be most consistent with commercialized agriculture, which is characterized by a rationalized production system where production is left fully to the market or planned to achieve specific policy targets. The confused mixed approach of no market and no planning (or imperfect market and imperfect planning) has not been viable in Middle East agriculture.

Finally, food security seems to be the most feasible and desirable objective. It may be realized by substituting food production for other commodities; by coordination among member countries of the region; and by importing to fill the deficit.

To assure security it may be necessary to establish food reserve banks in strategic locations. A food reserve fund, keeping foreign exchange on hand to be used when necessary, may be an equally viable method of assuring supply. Both the bank and the fund approaches would be most viable and efficient if coordinated on a regional or subregional basis.

In the final analysis, regardless of the policies adopted, self-reliance remains as the most important mechanism to promote sustainable agriculture and food supply security.

- - -

Rapporteur

Harold Matteson
New Mexico State University

* The focus of the Near East institutional development efforts should shift from the training of scientists toward preparing institutions to manage their human and physical resources better. Management now constrains further development of the major agricultural institutions in the Near East.

* The Near East group did not agree with the premise of some individuals that AID should de-emphasize its support for agricultural research; that technologies are in place and enough scientists have been trained. Increased population, poor water quality, pressure on natural resources, and degradation of the environment have increased the need for environmentally sound technology and better research system management to sustain the gains in agriculture research of the past 20 years. Equal attention should be given to both agricultural research and technology transfer.

* Water will be more important than oil for agricultural production. Studies should be conducted to assess the appropriateness, efficiency and effectiveness of the water management systems used for agriculture production in the region. Such studies would include an analysis of water demand and supply, an assessment of key variables in effective water delivery and management, and a review of the major policy issues related to efficient use of water, such as cost recovery. BIFAD would have an excellent leadership opportunity in sponsoring these types of analyses and recommending the types of AID assistance to this sector that might be appropriate for the next decade.

* AID has placed increasing emphasis on structural adjustment and enhancing countries' ability to make policy decisions. It is important to continue developing indigenous capacity to undertake economic and social analyses to support

policy decisions. Here is another opportunity to BIFAD to provide intellectual leadership--identifying the important agricultural policy issues for the next decade and providing analytic input to selected countries who are tackling structural reform.

* Because of population growth and finite land resources as well as traditional land-holding and inheritance practices, there is growing concern that emphasis be put on the income effects of programs which support increased food production. Any strategy to alleviate poverty must look beyond the objective of increasing yields and find ways to improve farmer income. This may include more attention to off-farm employment opportunities.

* Although most Near East countries have increased their agricultural production during the past decade, population growth has increased more rapidly in some countries. Thus, actual increase in food production per capita is lagging in these countries. These facts have serious implications for all three themes of the symposium. The Near East group encouraged continued efforts toward effective family planning in this region to stem population growth. Due to the importance of this matter, the Near East group encouraged BIFAD to consider hosting a symposium on the population issue as it relates to food production, sustainability and natural resource depletion.

Symposium Summary

Lowell Hardin
Purdue University

Concluding Remarks

William Lavery, Chairman
Board for International Food and Agricultural Development

SYMPOSIUM SUMMARY

Lowell Hardin

I have organized my observations from three sources: What I have heard; what I think I heard; and what I wish I had heard.

As I reflect on the values that permeate this discussion, and the dedication of the people in this room, I recall and recognize how fully this community--varied in age, background and interest--can devote itself seriously to this important topic in a period in which real change may be in the offing.

I have organized your comments under four headings:

- * The situation and outlook as related to development assistance.
- * The prospective demand for development assistance in the 1990s. What is most likely to be wanted?
- * The probable supply of development services. What is likely to be our capacity to respond?
- * Next steps. What are we--BIFAD, the universities, and AID--going to do about it?

Situation and Outlook

How did you characterize it? It seems to me you said:

"Yes, slow progress is being made against hunger and poverty. But without the programs of which we have been a part and without that potential, the outlook would be bleak indeed."

Even with good fortune and well-executed programs, poverty will remain an immense problem. The world will likely enter the 1990s with perhaps 700 million human beings living at low, degrading levels of existence.

Three-fourths of these people will be in the poorest countries. In order for them to have a better tomorrow, their economies must grow. Income redistribution schemes are not substitutes for production increases. There simply is not enough income or output to redistribute for that approach to do the job.

So, growth is essential. Development assistance can help accelerate growth. Broad-based growth can help less advantaged people out of poverty and hunger. We as a nation should and will be among those that are helping.

A second characterization of the outlook for the 90s has to do with trade. Yes, you said, we are in an interdependent world. No, not everyone recognizes the significance of interdependence. And this includes much of the body politic in the United States.

The 1990s are likely to be vigorously competitive as virtually every nation pushes to benefit from export-driven growth. Logically therefore, we can expect people to be increasingly conscious of the payoffs that can come from more open trade regimes. But trade is likely to remain less open than most here think it should be.

To grow the developing countries must be able to import intermediate products, and to export products for which they have or can achieve a comparative advantage.

Beyond commodities, we are interdependent in more than a materialistic or trade sense. We are increasingly important dependent on one another for ideas, concepts, genetic materials, and improved technologies. No longer does any one nation, let alone the United States, have a monopoly on these essential resources. Our ability to interact, to share on a peer basis, is certain to be a key to progress in the decade ahead.

The 1990s will also be characterized by an ever-increasing sensitivity to environmental concerns. Translated this means development of agriculture in a manner that sustains and builds productivity.

We are reminded that there is an enormous public interest in environmental matters. This concern can translate into constructive support for sustained agricultural and natural resource development. But how are we to define the relevant questions more sharply and get the needed answers? At this stage we have more hypotheses than definitive answers. We can ill afford not to carry out the experiments required to test those key hypotheses. Ecological concerns are not a passing fad.

In no small measure, resource degradation is the hand maiden of relentless population growth. For this reason and for the sake of improving living standards generally our plans for the 90s must not be silent on the matter of family planning programs.

Another characteristic of the setting for the next decade is new political realities. As a nation, the United States will undergo further adjustments to different, often lower magnitudes of influence as our share of the world's gross production declines (not because ours falls but because that of other nations continues to rise). Optimistically, we may also be in a changed era of relationships with the USSR and eastern bloc countries.

If regional political settlements go forward, nations may have an expanded opportunity to adjust their national strategies

with respect to economic security (development) as contrasted to political security (defense). Such developments could well be one of the brightest aspects of the 1990s.

Finally, the 1990s promise to be a period of potentially explosive scientific developments. The contributions of biotechnology. The advances in information technology. The implications that instantaneous communications have for collaborative work among advanced and recently developing countries!

We should not count our chickens before they are hatched, but clearly much of development is science- and technology-driven. We must continue to earn our seat on the front row if we are to stay abreast of world-wide scientific and technological developments.

Prospective Demand for Development Services

Among the developing countries the picture is, as always, diverse. The range in the needs of the LDCs is as wide as is the diversity in their ability to finance their proposed programs.

Because BIFAD has food and agricultural development in its title, one could think that the high priority given to continued agricultural development assistance is in fact self-serving. Not so.

For nations still dominantly rural, an ongoing focus on small-holder agriculture with emphasis on the development and diffusion of improved technology is still required.

In part, this is due to the continuing pressing need in many areas for enhanced food availability. The hunger battle is only partly won. More important, though, is the now-proven contribution that agriculture and broad-based, employment-led growth makes. Thus, with respect to need it is urgent that agriculturists stay the course as major contributors to accelerated development.

With respect to effective demand--the ability to pay for development assistance--the picture is less clear. Almost unchallenged is the projection that, at best, resources available to the United States Agency for International Development will be flat or declining in the period ahead.

Admittedly, this could change. In a democracy people can change predictions of this sort if sufficient numbers so desire. But the historic record suggests that the resources for foreign assistance have risen only when a) the cold war was heating up or b) a crisis appeared imminent--as with the world food scare of the early 1970s.

Prospective Supply of Development Services

With respect to the supply of well-trained, interested people who dedicate their careers to development, I heard divergent forces being discussed in the course of these two days

One of these forces said that interdependence and trade developments dictated that the United States develop more genuine internationalists--individuals with high levels of linguistic competence and cultural understanding as well as excellent disciplinary skills. Business and commerce require them. Enlightened government agencies and programs must have them. Universities must help produce them.

Second, I heard you say that whatever form development assistance programs take in the future, highly-qualified professionals, regionally literate and acceptable as peers to colleagues in developing countries, will be sought by host countries and agencies involved. Second raters will be unacceptable.

Third, the universities as the basic training ground for generating this supply recognize the challenge. The Title XII universities, however, are state-supported institutions whose legislatures still regard international relationships and development assistance as the financial responsibility of the federal government. However, these relationships may be changing. Note the proliferation of state-sponsored missions that travel to prospective trading-partner nations. Perhaps the linkage between federally-funded development assistance and state-supported trade enhancement can be strengthened.

Fourth, as now organized and conducted, the present AID/university partnership often does not attract into or interest the best and the brightest of our land grant college people in developmental work. Present academic incentive and reward systems typically are not designed to entice able young scientists into overseas posts. We no longer have major U. S. university to LDC university development programs in which U. S. faculty can excel while acquiring invaluable international experience.

Short-run, many U. S. universities appear to be willing to authorize more than enough staff members to off-campus posts to fill the openings that are funded. However, major uncertainties surround the future of young professionals who dedicate their careers to development. Long-run, therefore, our ability to sustain the quantity and quality of topflight development professionals in the pipeline is an important concern. It may well be in the national interest for the United States to have more practicing internationalists than existing market forces are likely to generate.

Next Steps

We applaud the initiatives of the task force on U. S. foreign assistance of the House of Representatives as reported to us by Congressman Lee Hamilton. Whether the result be a new act, or the status quo, we are grateful that deliberations are underway.

The outcome of this and other symposia are being fed into the forum through which public policy is made. We--BIFAD, the universities, and agencies--are challenged to do our very best to:

- * Move sharply--not drag out the review/revision process too long. Otherwise, there is danger that the infrastructure and human capital we have developed in this arena will be allowed to dissipate.

- * Correct national policy with respect to the funding of ongoing relationships with AID graduate countries. Modest AID funding is required to reestablish long-standing collaborative activities with these middle income nations. Other industrial countries are well ahead of us in this area.

- * Ensure that we now focus our AID efforts along lines of our real comparative advantage. That may be shifting somewhat. Clearly, help in developing human capital, building institutions, strengthening research and improving technology are high on such a list.

- * Intensify development assistance education with the body politic. We recognize that American people respond to humanitarian needs just as they also recognize the role of self-interest. We need to be clear and fair in spelling out that which serves America's enlightened self-interest. Integrity is required in addressing the downside, the losses, as well as the gains from more open trade. This is an admonition to which enthusiasts for support to development assistance have not always adhered.

- * Open our minds to experimenting with new modes of partnerships: between public entities and private firms; among private voluntary organizations, non-governmental organizations, universities and AID; among different bilateral agencies; and between bilateral and multilateral organizations.

Institutional innovation is not new to us. U. S. university people were major architects of the international research center concept and of the Consultative Group, the institutions through which their support comes. If we were capable of that kind of institutional innovation to meet a set of critical needs, surely we can innovate in other areas as well.

* Register a mandate to BIFAD. It reads: Carry out your mission. Be analytical. Be independent. Be firm and persuasive. This is a time to demonstrate the utility of the institutional innovation that, in fact, the BIFAD is designed to be.

I conclude on a note of optimism. I quote from Don Paarlberg's new book entitled "Toward a Well-Fed World":

"The thesis of this book is that the world is on its way to overcoming hunger. Countries that formerly accepted hunger. . ." (and he could add poverty as well) ". . . have now challenged it. The initiative has passed from the grim reaper to those who oppose him."

Symposium participants have been architects of the transformation of which Don speaks. At this juncture we have an unusual opportunity to revise, revitalize and energize our development assistance activities.

CONCLUDING REMARKS

William Lavery

As we have heard many times throughout the symposium, it is a time of change. We can sit back and watch the change or we can be a part of it and help shape the future.

It would be irresponsible for BIFAD to sit by. I know I speak for the Board in saying that we plan to influence change within the very scope of our mandate.

Clearly, the symposium provides a good foundation for making input into the process of change. We heard many opportunities for BIFAD and others to provide input on a continuing basis as well as during this symposium.

The consensus-building that we have achieved here is important. BIFAD will develop a statement that reflects this view of what needs to be done to meet the challenges we have talked about during this symposium. We will draw from other sources as well and complement and reinforce other efforts, such as the Michigan State project, AID's November paper, and Congressman Hamilton's task force. Our success will only be possible with a unified approach.

Let me thank each of you for your participation, your interest, and your guidance in what is a most important period in this country in development assistance.



BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT
INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Agency for International Development
Washington, D.C. 20523

May 10, 1989

INFORMATION MEMORANDUM FOR THE ADMINISTRATOR

FROM : William E. Lavery, Chairman *Bill*

SUBJECT: BIFAD Symposium Report

Enclosed you will find a copy of BIFAD occasional paper 13, "Development Partnership in World Agriculture for the 1990s: A Symposium." It is the Report of the BIFAD event held in conjunction with A.I.D. last Fall. In it you will find some most interesting information. Several key points follow:

- Congressman Lee Hamilton, Chairman of the House Task Force on rewriting the Foreign Assistance Act said that there is, "A general discomfort based on the feeling that foreign assistance is 'not working' and that our program is not achieving its purposes. (p. 17)
- John Mellor, Director of the International Food Policy Research Institute, said, "We find that in Africa, Asia, and Latin America, respectively, 90 percent, 80 percent, and 60 percent of the poor are in rural areas". (p. 37)
- A.I.D. Administrator Alan Woods made the point, "A lot of debate is still going on in the development community about which is the target -- poor countries or poor people? The answer is ... both of them." (p. 45)
- Nesheim and Harvey of Cornell University, pointed out that, "The World Bank in 1986 estimated that 730 million adults and children in the world (excluding China) did not have enough calories for an active working life." (p. 66)
- Fred Hutchinson, Vice President for Agriculture at Ohio State University, asserted, "national agriculture policies around the globe must be changed so that they

create an economic incentive for farmers ... Under these conditions, farmers will adopt the long-term outlook required for agricultural sustainability." (p. 104)

- Cesal and Rossmiller of Resources for the Future, proclaimed that, "The economic self-interest of the United States is well-served by promoting economic and trade growth in developing countries." (p. 79)
- Uma Lele of the World Bank, stressed, "Africa's economic crisis is coming increasingly to be recognized as stemming from the critical state of agriculture in most African countries." (p. 117)
- Robert Havener of Winrock International, outlined the successes in Asia - economic growth and massive increases in food production. Talking about hunger, he said, "if current trends persist that figure will reach three-quarters of a billion people by the year 2000. And in the face of these pressures, recent gains in per capital food production will prove difficult to sustain ..." (p. 139)
- Arthur Coutu of North Carolina State University, looking at the problems in Latin America, suggested that, "... support for agricultural science should dominate U.S. actions and will impact hunger, sustainable agriculture and trade poverty is a prime cause of hunger and environmental degradation...." (p. 162)
- Elias Tuma of the University of California at Davis, focusing on the problems of the Middle East, observed that, "the problem of food in the Middle East has been topical for the last four decades. We are not closer to a viable solution now than we were in the 1950s." (p. 165)
- Lowell Hardin of Purdue University, serving as the summarizer of the Symposium, opined, "yes, slow progress is being made against hunger and poverty. But without the programs of which we have been a part and without that potential, the outlook would be bleak indeed." (p. 181)

As a concluding statement to the Report of the Symposium, BIFAD believes that U.S. universities must integrate international concerns into the mainstream of their activities. Attracting the best and the brightest faculty into the international arena is an objective of the BIFAD. In this manner, Title XII universities can fulfill their obligations not only to themselves but also to the world in which we live.

Distribution List:

A/AID, Gordon Rausser
Fred Ruggles
Duane Acker
DA/AID, Jay Morris
C/AID, Ray Love
Gerald Kamens
Larry Hausman
ES/AID, Molly Hageboeck
AA/PPC, Richard Bissell
DAA/PPC, George Laudato
DAA/PPC, Clifford Lewis
PPC/PDPR, Katherine Blakeslee
Don McClelland
PPC/EA, Jerome La Pittus
PPC/CDIE, Janet Ballantyne
Paula Goddard
Gary Hansen
PPC/PB, George Hill
Arnold Baker
PPC/WID, Kay Davies
SAA/S&T, Nyle Brady
DAA/S&T, Bradshaw Langmaid
Gene Chiavaroli
S&T/PO, Doug Sheldon
S&T/RUR, Curtis Jackson
Gary Bittner
S&T/FA, William Furtick
Ralph Cummings
S&T/AGR, David Bathrick
Loren Schulze
Vincent Cusumano
Harvey Hortik
Tejpal Gill
S&T/N, Norge Jerome
S&T/EN, Jack Vanderryn
S&T/FNR, John Sullivan
S&T/HR, Antonio Gayoso
S&T/RD, Eric Chetwyn

S&T/H, Kenneth Barv
Roxann VanDusen
S&T/POP, Duff Gillespie
AA/M, Michael Doyle
M/SER, John Owens
James Murphy
M/SER/OP, Terrence McMahon
Francis Moncada
Jay Bergman
M/SER/MO, Charles McMakin
AA/PFM, Robert Halligan
PFM/PM, Laurance Bond
PFM/FM, Michael Usnick
PFM/FM/BUD, Marcus Rarick
AA/FVA, Philip Christenson
DAA/FVA, Owen Cylke
AA/PRE, Neal Peden
DAA/AFR, Walter Bollinger
DAA/AFR, Edward L. Saiers
AFR/DP, John Westley
AFR/PD, Timothy Bork
AFR/TR, Keith Sherper
Calvin Martin
AFR/TR/ARN, Lance Jepson
AFR/TR/ANR/FS, Norman Sheldon
AFR/TR/ANR/NR, Abdul Wahab
AFR/TR/ANR/PA, Thomas Hobgood
AFR/TR/HPN, Gary Merritt
AFR/TR/EHR, Cameron Bonner
AFR/EA, David Lundberg
AFR/CCWA, Julius Coles
AFR/SWA, Phyllis Dichter
AFR/SA, Fred Fischer
AA/ANE, Carol Adelman
DAA/ANE, Thomas Reese
DAA/ANE, William Fuller
ANE/DP, Peter Bendict
ANE/DP, Norman Nicholson
ANE/P', Ronald Venezia
ANE/TR, Barbara Turner
Richard Cobb
ANE/ENR, Robert Ichord
ANE/ARD, James Lowenthal
Michael Korin
Charles Uphaus
ANE/HR, Harold Freeman
ANE/SA, John Pielemeier
ANE/EA, Robin Gomez

ANE/MENA
DAA/LAC, Frederick Schieck
LAC/DR, Terrance Brown
 Gerry Bowers
LAC/DR/RD, Steven Wingert
 Gale Rozelle
LAC/DR/HN, Paula Feeney
LAC/DR/P, Maura Brackett
LAC/DR/EST, Joseph Carney
LAC/DP, William Wheeler
LAC/CAR, David Cohen
LAC/CEN, Charles Costello
LAC/SAM, Craig Buck
XA, James Kunder
 Gordon Murchie
LEG, Kelly Kammerer
 Tyler Posey
IG, Herbert Beckington
GC, Howard Fry
 John Mullen
GC/AFR, Gary Bisson
GC/CP, Stephen Tisa
GC/EPA, Jan Miller
OFDA, Julia Taft
SCI, Howard Minners
 Irvin Asher
OIT, Al Bissett

Enclosure: a/s

BIFAD:LLPesson:bls:5/10/89:Ext:79048:#4687A