BUILDING VIABLE FOOD CHAINS IN THE DEVELOPING COUNTRIES

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BUILDING VIABLE FOOD CHAINS IN THE DEVELOPING COUNTRIES

INTRODUCTION

Growing world food shortages and increased awareness of human nutrition problems are reminders to those associated with agricultural and agribusiness development that renewed efforts are needed to establish viable food systems in developing countries. Many of the past efforts for agricultural development have focused primarily upon production links of a much more comprehensive production-processing-marketing food chain. One aim of this conference was to more broadly view food supplies and needs in developing countries in terms of interconnected links of a total chain or system. Development of all links within such a food chain must be coordinated if the chain itself is to function effectively.

Building viable food chains in the developing countries requires balanced agribusiness development of farm inputs, production, processing, marketing and distribution of the food commodities. No longer should it be assumed that development of only one vital component of the over-all system or chain will trigger other needed developments. Past experience has shown that much more comprehensive agribusiness planning and development activities are essential to meet the growing food needs of the world.

Background

This Agribusiness Planning and Development Conference was the final segment of a three-part series of planning conferences and workshops sponsored by the Technical Assistance Bureau of the Agency for International Development. The over-all purpose of the series of conferences was to identify and explore key attributes of agribusiness planning and development to build more effective food systems in the developing countries.

The first conference was primarily a planning session designed to review and reassess policies, programs and activities affecting agribusiness development. (A summary of the meeting is presented as Appendix II.) Participants were from the Agency for International Development (AID) and selected AID contractors. A broad range of problem areas of concern were presented and discussed; preliminary suggestions for possible new and improved approaches for agribusiness development were explored; and goals for the subsequent conference were formulated.

The second conference was principally a workshop session in which a series of worksheets were utilized to further identify and explore potential improvements in agribusiness development activities. (A summary of this conference is included as Appendix III.) Participants of this conference were primarily AID people who have had first-hand knowledge and experience with past and present development efforts. From this conference the main topics and areas of focus for the final conference were developed.

Agribusiness Planning and Development Conference

With the background of the two prior conferences, the Agribusiness Planning and Development Conference was designed to focus full and open discussion on the theme "Building Viable Food Chains in the Developing Countries". Participants were selected for their professional interests in and contributions to fields related to this theme. They come from a cross-section of the bureaus and offices of the Agency for International Development, from other international development organizations (FAO, IBRD, IDB, OPIC, Agribusiness Council), and from selected AID contractor institutions. The full list of participants is included as Appendix I herein.

The Conference was structured to climax in work group discussion for developing a consensus of beliefs and recommendations on how to conduct more effective assistance for building viable food systems in the developing countries. The findings and recommendations of the Conference are presented in the following section of the report.

Keynote sessions were used to set the stage for the work group discussion. Each keynote session included presentation of an invited paper followed by group discussion on the subject of the paper. The topics for these sessions were selected to develop key points related to the theme of the conference. Condensations of the keynote papers and the accompanying group discussions are reproduced in the final main section of the report.

The full program for the Agribusiness Planning and Development Conference is summarized on the following page.

SUMMARY PROGRAM

Agribusiness Planning and Development Conference

Washington, D.C., May 30-31, 1973

Opening Session

1. Purpose and Structure of Conference
   Omer J. Kelley, Agency for International Development
2. Food System Development
   David D. Gaumer, Agency for International Development
3. Visualizing Food Systems
   Richard Phillips, Kansas State University

Keynote Session I -- Applying the Commodity System Approach

Presentation: Leonard M. Wilson, Harvard University

Group Discussion: Participants

Keynote Session II -- Market Orientation in Space, Time and Form

Presentation: Richard A. King, North Carolina State University

Group Discussion: Participants

Keynote Session III -- Establishing Supporting National Programs

Presentation: George K. Parman, Agency for International Development

Group Discussion: Participants

Keynote Session IV -- Formulating Effective Assistance Programs

Presentation: Frank Meissner, Inter-American Development Bank

Group Discussion: Participants

Workgroup Session

	Group I	Group II
Leader:	James A. Urano, AID	Ralph E. Hansen, AID
Rapporteur:	Paul I. Kelley, KSU	William J. Hoover, KSU

Guide Questions for Discussion: (Both groups)

1. Is the commodity system approach realistic to help solve the growing food shortage?
2. What do we need to know to apply this approach in AID programs?
3. How can AID ulitize this approach to strengthen its on-going agribusiness development program?

Plenary Session -- Findings and Recommendations of Conference

Chairman: Joel Bernstein, Agency for International Development

FINDINGS AND RECOMMENDATIONS

The consensus of the Conference was that the Agency for International Development can build more effective development assistance programs for food systems by establishing an agribusiness focus which involves:

(1) Utilization of the commodity system (food chain) approach.

(2) Adoption of region-specific or area-oriented development programs.

(3) Concentration of resources on commodities in space, time and form which have the greatest comparative strengths.

(4) Assisting host countries develop a framework of National programs to support food chain development.

(5) Development of formal cooperation and communications among the principal donor agencies providing assistance for food chain development.

In the food system context, agribusiness involves production, marketing, processing and distribution, and encompasses the entire complex of key activities which are vital in supplying food to people everywhere. Agribusiness deals with all elements both public and private, which enter into the production-processing-marketing-distribution systems for food commodities. This total agribusiness complex involved in food systems must be given more central and concerted attention if agricultural development is to be fully effective.

The principal conclusions and recommendations of the Conference to the Agency for International Development may be summarized under eight headings as follows:

-- Commodity systems approach

-- Region-specific programs

-- Commodity and project priorities

-- Supporting national programs

-- Agribusiness focus

-- Conditions for effective agribusiness loans

-- Coordinating consortium among development agencies

-- Related considerations

- Commodity System Approach

Recommendation: Adopt a commodity system approach to assistance programs for development of food supplies.

The commodity system approach (defined in the Phillips-Unger paper) was regarded by the conference participants as a key concept toward building viable food systems in developing countries. The principal point in recommending this approach is that systematic planning and development of all vital activities which are necessary to effectively produce, process, market, distribute and utilize a food commodity should be of concern in development activities. Past efforts by AID and others have resulted too often in filling one gap toward development only to discover subsequent gaps which render the prior efforts largely ineffective. Food system effectiveness is measured in terms of how all components of the food chain function together. The commodity system approach can serve as an important tool in planning, implementing and evaluating commodity-oriented agribusiness development activities.

- Region-Specific Programs

Recommendation: Adopt region-specific (area-oriented) development plans and programs.

Development problems and potentials in the developing countries usually differ from area to area within each country. Consequently it is recommended that region-specific development programs be generated and adopted as a regular procedure in planning development activities. Application of the commodity system approach on a regional basis will disclose important differences in needed development activities among regions. Furthermore, it often is advisable to concentrate financial and other development resources in a limited number of regions for massive impact, and later move them to other regions for concentration.

- Commodity and Project Priorities

Recommendation: Concentrate resources on commodities and projects in space, time and form which have the greatest comparative advantages or strengths.

Development efforts traditionally have been constrained by the lack of resources to fully implement all desired activities. However, it was recognized that too often development efforts have focused upon relative weaknesses and problem areas, rather than upon strengths (see Gaumer's paper). More attention needs to be given to finding commodities and projects which offer the greatest comparative advantages for individuals and businesses in a given region or area. Limited resources should then be concentrated in such commodities and projects.

The search for projects with the greatest comparative advantages needs to include assessment of space, time and form aspects of resource planning and use. (This is the primary subject of the King paper.) These dimensions of development planning are critical for building viable food chains as well as for sound regional development.

- Supporting National Programs

Recommendation: Assist host countries develop a framework of National programs to support food chain development.

Building viable food systems requires the integration of both public and private development activities. It is essential that host governments change restrictive policies and programs, and also that they develop the needed regulatory and supporting programs. Competent advisory services are much needed in these areas.

Major types of policies, regulations and supporting activities which may be involved in a framework of National programs to support food chain development include (1) taxes on raw materials and products, (2) subsidies on raw materials and products, (3) price supports, (4) market statistics and news, (5) grades and standards, (6) import and export regulations and quotas, (7) location and zoning requirements (8) public warehousing regulations, (9) consumer price controls, (10) fair trade practices, and others. The main point is that viable food chains require a political and economic climate that provides order and stability to the over-all system. (This topic is discussed in Parman's paper.)

- Agribusiness Focus

Recommendation: Adopt an Agency-wide effort of more concentrated focus on agribueiness in a food chain context.

A belief generally shared by the conference participants is that development assistance activities centered on building viable food systems should involve a strong agribusiness focus. Agribusiness permeates all levels of the commodity-system oriented food chain, including both public and private elements, and should be the focal point for agricultural development programs to meet the expanding needs for food.

In order to develop a common understanding and exchange of ideas concerning agribusiness and agribusiness approaches, a reorientation within the Agency for International Development to upgrade competence in agribusiness is recommended. It is suggested that agribusiness development be established as a key problem area by the Technical Assistance Bureau. Organization development, operational methods and procedures within the Agency would require careful study, but it is felt that AID leadership in this area would be beneficial to the international development community in general.

Participants from outside the Agency stressed that there is interest and need for agribusiness development, but that it just has not received emphasis. These participants further expressed their opinions that if AID would take the lead, other orgainzations and interest groups would follow.

- Conditions for Effective Agribusiness Loans

Recommendation: Endorse a loan concept in which vital implementation conditions are made a part of the agribusiness development loan package.

The level of success of agribusiness development assistance programs and projects often depends upon auxiliary or indirect activities which should be performed by the recipient country or institution. In the interest of effective development, it is recommended that any essential implementation conditions be incorporated in the agribusiness development loan package.

Such implementation conditions may range from requisite economic feasibility studies of sub-projects to training of operating personnel. These conditions should not be overly restrictive, but rather should provide for vital steps in effective implementation of a development program.

Formulation of agribusiness assistance programs and projects is both time consuming and complex (see Meissner's paper). Lack of training and experience in preparing project statements which are acceptable to the major lending agencies has resulted in a shortage of well-prepared "bankable" projects. This problem of improperly prepared project statements is a greater barrier to meaningful assistance efforts now than the shortage of development loan funds. It should be possible to overcome this problem if monies, guidelines and conditions for the preparation of bankable projects are properly incorporated into the development loan package.

- Coordinating Consortium Among Development Agencies

Recommendation: Provide leadership toward establishment of a coordinating consortium (consultative group) of agribusiness development organizations and interested groups.

A variety of organizations and agencies, e.g., International Bank for Reconstruction and Development, Inter-American Development Bank, FAO, AID, etc., are involved and concerned with agricultural and agribusiness development activities. Each organization has distinct objectives, policies and procedures, yet there is an important commonality and overlap in their development efforts. Unfortunately, there are also some gaps in their combined activities, e.g., provisions for working capital loans in development projects, which can affect projects or programs of all the donor agencies.

Both because of their common interests, and because of the need to improve over-all results of development activities, the participants of this conference strongly urge the Agency for International Development to provide the leadership toward establishment of a coordinating consortium, or consultative group, of agribusiness development organizations and interest groups.

- Related Considerations

A variety of additional points of concern which are related to the above recommendations were raised and discussed during the Conference. These related considerations add depth of understanding of the problems to be solved in agribusiness planning and development in the developing countries. A selected number of considerations included in the discussions are briefly described as follows:

1. Preservation. Past agribusiness development efforts have emphasized means to increase production as the way out of world food shortage problems. Vast increases in production have resulted, but food demand continues to bring pressure on available supplies. Concurrent increases in food losses have also occurred--due to spoilage, storage losses, rodent and insect losses, quality deterioration, etc. A potentially high payoff exists from improving the preservation of food products already in the food system (see the Gaumer paper).

2. Small Loans. The most viable agribusiness opportunities in developing countries oftentimes center on relatively small-scale agribusiness enterprises. The need for relatively small loans by such enterprises is difficult to serve under existing programs of international donor agencies. Provision of funds and mechanisms for providing financial (and technical) assistance to the potential small enterprises are needed.

3. Working Capital. Agricultural development agencies in general have stressed the application of loans for capital development and improvements, including facilities and equipment. In many instances, these donor agencies do not have authorization or have not provided for working capital loans to utilize the facilities or equipment. Donor agencies need to assure over-all operational viability by providing for working capital requirements.

4. Small-scale Technology. Past agribusiness development efforts have also stressed large-scale projects which require technology appropriately adapted for large enterprises. However, many remaining development needs and potentials apply to small-scale enterprises, which in turn require technology adapted to the smaller units. A promising agribusiness development alternative is to provide for the adaptation and application of small-scale technology.

5. "Global Loan" Concept. A means for potentially improving the allocation of financial resources within a developing country is suggested in the concept of a global loan package. Such a loan package consists of a master loan fund, from which reloans are administered into smaller units. Various administrative and management policies and procedures are implicitly required, e.g., (1) establish a global loan program, (2) affiliate with good local institution(s) for reallocating funds, (3) establish loan application procedures, (4) establish project feasibility requirements, (5) manage sub-loans, and (6) others. Further study of this emerging concept for agribusiness development is suggested by the participants of the Conference.

6. Cooperation. There is a steadily growing volume of agribusiness planning and development work that is needed. The burden cannot be carried by any one national or multinational donor agency. Cooperation and coordination of efforts is believed important to better provide effective

agribusiness development aid. The participants of this Conference strongly support further leadership efforts by AID to provide additional cooperation.

PURPOSE AND STRUCTURE OF THE CONFERENCE

Omer J. Kelley
Director, Office of Agriculture
Technical Assistance Bureau, AID

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PURPOSE AND STRUCTURE OF THE CONFERENCE

Omer J. Kelley

On behalf of the Office of Agriculture and the Technical Assistance Bureau, I would like to welcome you to the Agribusiness Planning and Development Conference. This is the last in a series of planning sessions and conferences concerned with agribusiness development.

Purpose: We are here to explore the opportunities, the desirability and the methods of increasing our effectiveness in assistance programs for agribusiness development; we are looking forward to your active participation in the program. The area of agribusiness development is one in which past AID programs have experienced only limited success. We are seeking your suggestions as to how we can be more effective in this important area.

The list of invited participants has purposely been kept small, as this is a working session. However, as a group we represent a broad range of professional skills and experience including technical sciences, capital development and social sciences. Such a cross-section is desired because agribusiness involves many disciplines and technical skills.

The climax of the Conference will come tomorrow afternoon when you divide into work groups to formulate your findings and recommendations. We hope that the group discussions will be frank and open

because we want help and advice, not bouquets. We want you to feel free to make recommendations in any area which the groups believe to be of value.

Structure: Based on the previous conferences in this series, the Conference Committee has selected the theme "Building Viable Food Chains in the Developing Countries" and developed a series of keynote topics to set the stage for the work group sessions. The keynote topics are designed to give us a chance to become acquainted with some of the frontier thinking in specific subject areas related to the theme of the Conference. Ample time has been reserved for participant discussion following each keynote presentation so that we can have the benefit of your thinking as we go along.

This morning we will set the stage with two introductory papers. Dave Gaumer will deal with "Food System Development" and Dick Phillips with "Visualizing Food Systems". These will be followed by a series of four keynote sessions: (1) "Applying the Commodity System Approach," led by Leonard Wilson; (2) "Market Orientation in Space, Time and Form," led by Dick King; (3) "Supporting National Programs," led by George Parman, and (4) "Formulating Effective Assistance Programs," led by Frank Meissner. If everything goes according to plan, these keynotes will set the stage for our work group sessions, after which Assistant Administrator Joel Bernstein will lead us in our final plenary session to finalize the findings and recommendations of the Conference.

Speakers: I would like to compliment the Conference Committee on the caliber of speakers as well as on the caliber of participants mustered for the Conference. A few "qualifying" comments about each speaker may be in order.

David D. Gaumer is our own Agribusiness Specialist in the Office of Agriculture, and will be until his resignation at the end of June to return to his law practice in Kansas. In addition to his agribusiness program responsibilities to support AID Missions around the world, Dave has been coordinating officer for the Kansas State University contract through which the series of three agribusiness conferences have been held.

Dr. Richard Phillips is Professor of Economics at Kansas State University, where he devotes a substantial portion of his time to the AID world-wide contract through the Food and Feed Grain Institute. He is author of at least one text and a large number of shorter publications on agribusiness. He and Dave have worked together closely in the development of plans and materials for all three conferences.

Leonard M. Wilson is Agribusiness Consultant to Harvard University, and through the Harvard contract, to AID. His experience with commodity systems includes operational management as well as research. He brings to us first-hand experience with the non-traditional fruit and vegetable export program in Central America.

Dr. Richard A. King is M. G. Mann Professor of Economics at North Carolina State University. He is well known for his books, including Bressler and King, "Markets, Prices and Interregional Trade," (John Wiley and Sons, 1970), for his achievements in building refined but practical total market models, for his work in Peru and for his many other activities outside North Carolina. We think of him as the top expert on the space, time and form dimensions of food systems.

George K. Parman is our Food Processing Specialist in the Office of Agriculture. In this role, his professional ability and his wide first-hand experience in developing countries of the world provide an excellent base for his discussion of supporting National programs for viable food systems.

Frank Meissner is specialist in agricultural and agribusiness projects for the Inter-American Development Bank. Frank has long been an advocate of integrated approaches to the development of agriculture and agricultural marketing systems. We all can look forward to the fresh and penetrating ideas that he has to bring to us.

NEEDS AND REQUIREMENTS FOR FOOD SYSTEM DEVELOPMENT

David D. Gaumer
Agribusiness Specialist, Office of Agriculture
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NEEDS AND REQUIREMENTS FOR FOOD SYSTEM DEVELOPMENT

David D. Gaumer

I am looking forward to participating in this Agribusiness Planning and Development Conference and to hearing the recommendations which I hope will come from it. I am convinced that we are falling far short of meeting the needs for food system development. Since joining AID, I have been involved in examining a number of agribusiness projects dealing in food products, some by private sector companies, and some by quasi-public entities. Some have had limited success, some have been downright failures, but all were operating below expectations. I am counting on this Conference coming up with guidelines and recommentations to help improve our track record. I would like to start the discussion by throwing out some ideas on why success has been limited, the critical needs for agribusiness development of full food systems, and some of the requirements if the Agency and other donor organizations are to be effective in helping to meet these needs.

Objective of Agribusiness Development

The objective of agribusiness development is to have food supplies available in the quantity and quality needed, at the time and place required, and at a fair price, to serve the consumer markets for the product. Somewhere in the system, at some stage in development, food

specifications must be incorporated, quantities must be known, demand and supply responsive prices must be negotiated, orders must be placed and filled, receiving, inspection, and transfer of ownership must take place, storage and transport services must be provided. With the expanding demand and soaring food prices around the world, few of us would argue with the high priority which must be assigned to achieving this objective.

Agribusiness development to me simply indicates in the food system what economists have long recognized, that a division and specialization of labor is essential to increased productivity. "Agribusinesses" are simply entities within the food system which reflect such specialization, starting with the "commercial" farmer, and ending with the consumer, regardless of where that consumer might be, within the developing country or abroad.

This specialization is essential for food industry development. The planner should spend his time bringing together the "pieces" affected by the host Government necessary to support the development of agribusiness entities within a certain area. The businessman should concentrate on developing his market, processing and packing his product in accordance with the specifications of the buyers, tying together and focusing upon managing those pieces of the system over which he has some degree of control. The farmer should specialize in producing the best crop or livestock product possible, utilizing the best available technology and varieties.

But, in order to make the most of the division and specialization of labor in agribusiness development, some institution within the

developing countries and within technical assistance agencies must exist to coordinate these many and diverse activities, and to provide a focal point for bilateral and multilateral assistance agencies in support of such development.

Needs for Effective Agribusiness Development

The start of any agribusiness system development is the establishing of goals and developing of plans which will meet the objectives of the market, the consumer, or the institutions which the system serves. In a well-managed and effective agribusiness development program, we would expect to see the following:

1. An orgainzation plan involving several governmental agencies, banking institutions and private sector entities, with the responsibilities of each clearly spelled out. This would include a description of the tasks to be done, and schedules for doing them. The standards involved would be a definition of the methods, supplies and equipment needed by each responsible entity to perform each necessary task, plus the time required to assure some performance out of the system under development.

2. An administrative plan which would provide for the necessary budgeting, working capital, coordination, and issuance of directions, accounting, and evaluating the results of the development effort.

3. Innovation and experimentation in which new ideas are tried, evaluated and then accepted or rejected.

With several notable exceptions, I have over the past three years found little evidence of this type of planning. What's more, most of the agricultural people with whom I have dealt did not think in terms of forward planning and establishing standards, goals, methods, etc.

I believe that AID and other technical assistance agencies have a responsibility to assist those in the developing countries to develop adequate plans which are sufficiently broad to cover complete food systems.

The needs for effective agribusiness development do not stop with creation of an adequate food system plan, however. I suggest that there are at least ten key steps needed:

1. Develop an over-all plan of agribusiness development, sorting out strengths and comparative advantages along commodity lines.

2. Determine that such a plan is realistic and right for the development of agribusiness entities within the area selected for development.

3. Schedule realistically the time over the long term that it will take to implement the program.

4. Budget the time and effort it will take on a continuious basis to put in place viable entities on the part of all responsible parties.

5. Determine how those responsible for implementation and operation will daily monitor their operations and determine their business health at each stage of the operation.

6. Objectively develop criteria by which to assess change and to assess progress.

7. Determine the components and other separate activities to program and develop in support of the program being implemented.

8. Determine how activities should be sequenced during the implementation and operations stages, to reinforce the viability of

the various projects making up the food system and allow a reasonable chance of success for the program being developed.

9. Have some assurance that execution of the program will provide a feeling of development . . . a certain excitement . . . a fervor . . . a feeling of pride . . . a wanting to be identified with the program.

10. If it is needed, design support within the areas of the projects being developed . . . do it as part of and complementary to other development efforts in the immediate area.

In the development of food systems those concerned must realize that the quality and wholesomeness or final food products can in no way be disguised to exceed the nutritional quality of the raw food product delivered to the processor or handler. Quantitative and qualitative losses can and usually do occur in foods during handling and distribution from the farmer to the final processor; quantitative and qualitative gains rarely occur. Further, processing and handling of the raw product to remove refuse and waste material, such as peelings from tomatoes and bran from rice reduce both the nutritive value and quantity of food available to the final consumer. These facts mean that food systems which insure the preservation of the product in condition as nearly as possible to its original as it moves through the system will maximize the quality and quantity of food available to consumers.

Requirements for Meeting the Needs

We could spend a good deal of time listing specific requirements to be met by both donor agencies and by recipient countries if they are to be successful in meeting the needs for development of food systems. I am confident that the work groups will have con-

structive suggestions as to how we might meet these requirements. In order to help set the stage for the presentations and discussions to follow, let me summarize the requirements as only two.

First, I suggest that the development of any food system should be approached with all the calculation and determination of a businessman after his first million. Such an approach requires a cold assessment of the availability of energy, time, money, and the allocation of these resources in the direction of maximum effectiveness. The food problem, with the associated development of rural industry, the transfer of skills, and related concerns is too important to be played as a witless game. The first requirement for agribusiness development within the developing countries and for AID is to GET SERIOUS. We must go with strengths and comparative advantages rather than seek the toughest problems we can find.

The second requirement for agribusiness development follows directly from the first. AID and recipient countries serious about agribusiness development must GET ORGANIZED--organized to bring systematic and concerted effort to meet the needs for agribusiness development in complete food systems. This is something quite different from the individual initiatives on the part of AID contractors, direct hire technicians, public agencies and private individuals within the developing countries that have been undertaken in the name of "Agribusiness Development" over the past 17 years.

VISUALIZING FOOD SYSTEMS FOR ECONOMIC DEVELOPMENT

Richard Phillips and Samuel C. Unger
Kansas State University

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VISUALIZING FOOD SYSTEMS FOR ECONOMIC DEVELOPMENT

Richard Phillips and Samuel G. Unger

Introduction

It appears clear from the experience of U.S. AID and other international development agencies that potentially greater accomplishments can be realized through more broadly-viewed and more systematic approaches to economic development of agriculture and agricultural business. Both the consumer approach and the sector approach to planning and programming for the developing countries are pushing in this direction. What implications do these developments and other "systems" approaches have for those of us who are directly concerned with supporting the AID programs for development of food production, marketing, processing and utilization in the developing countries? The many implications and what we should do about them are of direct concern to all of us here.

We think it is useful to conceptualize the food production and distribution segments of developing economics in ways that help us understand the functions, key activities, interrelationships and linkages which will have to be changed through time if development goals are to be achieved. The total complex of the production, marketing, processing and distribution functions for grain products, for fresh produce, for livestock and meat products, for dairy products or for other food products in a country can be viewed as a "commodity system"

of linked steps through which the products flow to final consumers. We need to understand the total production-distribution complex for each group of food products as a commodity system in order to plan effective development. We want to stimulate balanced development of the complete system so that all component parts are geared to efficient delivery of food products in the form, time and place demanded by consumers.

Modern systems concepts and methods of systems analysis have direct application for the development of food systems. The difficultly is that the formal systems are somewhat complex and involve terminology which is hard for people to understand, so that the application to date has been limited. The basic systems concepts need to be visualized in simple terms with a minimum of technical terminology and content detail. If this can be done, our hope is that they can be translated to the languages of developing countries without loss of meaning, and be understood by those who have had no training in formal systems concepts.

The Food Chain Concept

The commodity system for a specified group of food products can be visualized as a chain of direct in-line functions, extending from the development of technical farm inputs to the utilization of the food products for human consumption (Figure 1). The chain illustrates the direct linkage among the separate functions. It demonstrates that each function is dependent upon the others and that the total chain can be no stronger than its weakest link, be it farm production, food processing or one of the other linked functions.

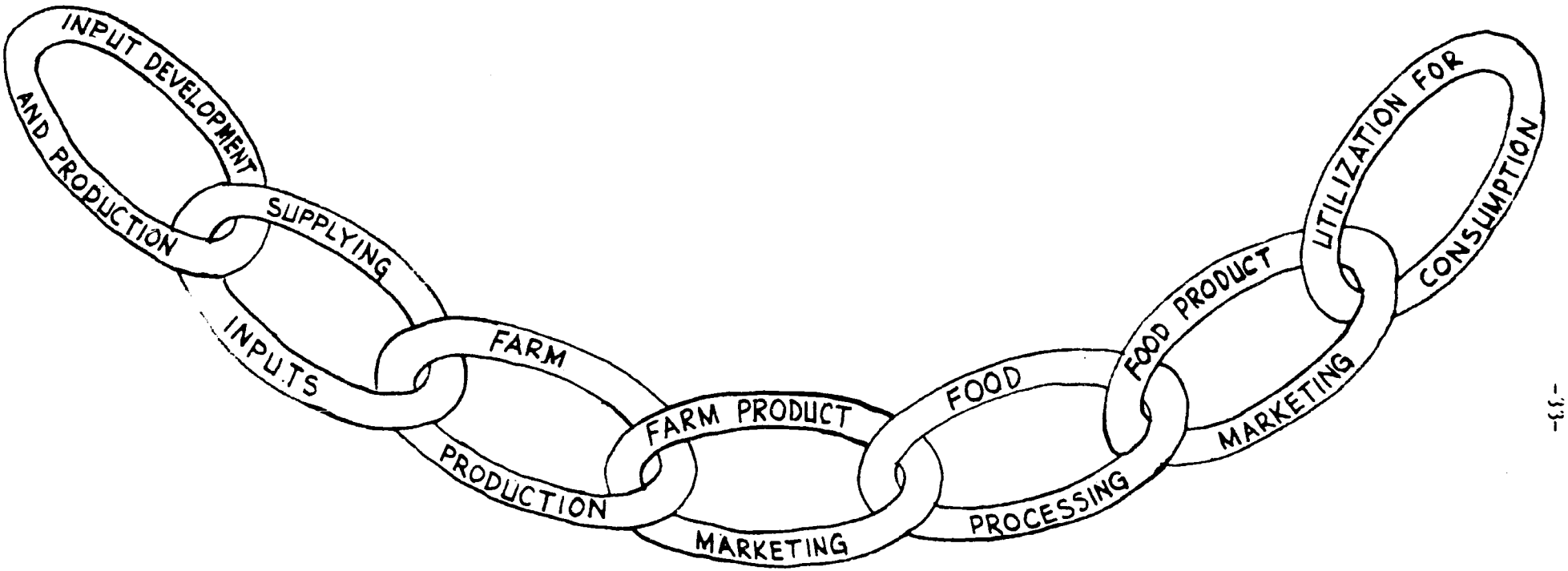

FIGURE 1. PRODUCTION-DISTRIBUTION CHAIN FOR FOOD PRODUCTS

The figure does not illustrate side flows such as by-product marketing and utilization, direct export of farm products and importation of processed foods. These complexities are not needed to illustrate the interdependences among functions and indicate that development programs which neglect any one of the major links will render less effective the development efforts pointed to other links.

More complete chains can be drawn to represent the commodity systems for specific food products in a given country or market. Farm product marketing can be broken into the appropriate series of linked functions, such as first assembly, grading and conditioning, storage, transport and wholesale distribution. Food processing can be broken into its appropriate linked functions such as raw product processing, packaging and distribution (say for wheat flour) and final food product preparation and packaging (say for bakery products). Separate food product marketing functions such as wholesaling, distribution, retailing, delivery can be shown in proper linked sequence. The more complete the chain, the more useful it becomes as a visual tool for helping to understand the commodity system for a particular set of food products.

Economic Activity in Food Systems

Food systems must do more than physically move the products through the chain to the final consumer. They also must perform the associated economic activities such as pricing, merchandising and financing through the system. These activities can be visualized as a series of two-way circular flows as shown in Figure 2. Whether the direct goals of development are improved nutrition for consumers,

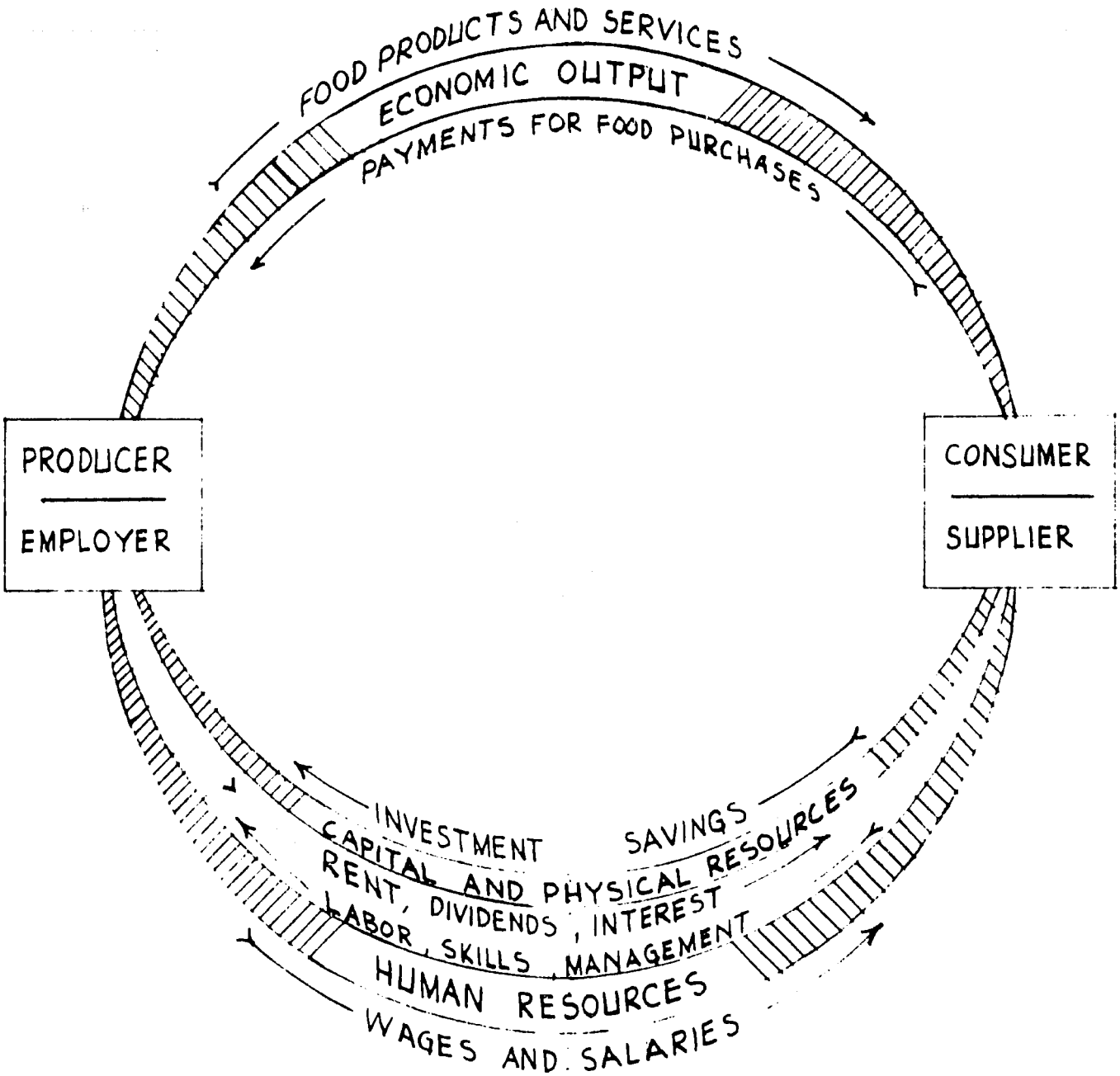

FIGURE 2. CIRCULAR FLOW OF ECONOMIC ACTIVITY IN FOOD SYSTEMS

increased income for producers, increased employment of labor and other resources, or some combination, the food system must accomplish the circular flows of economic activity involved at each of the links in the chain. The food products must be delivered to consumers and the payment for them transferred back through the chain to the farm and off-farm producers. The human resources of labor, technical skills and management must be delivered from the consumer-suppliers to the producer-employers at all stages in the chain, and corresponding wages and salaries transferred back. The capital and physical resources must be transferred from the consumer-owners to productive employment and the payments for their use transferred to the owners.

Economic development normally requires many changes in the institutions, facilities and procedures for accomplishing the circular flows portrayed in Figure 2. Subsistence production must give way to a more complete exchange economy. All of the circular flows must be increased, and this must be done without undue sacrifice of income distribution and other equity goals. Unless the food system responds to the challenge, neither the development goals which are consumer-oriented nor those which are producer-oriented have much of a chance. The total economy is involved, and when we are dealing with a major food product, the central focus is on the agribusiness complex making up the complete chain for that product.

The Chain Concept of Key Activities

The linkage and chain concept portrayed in Figure 1 may be detailed to the next level of content to portray the key activities involved in each of the major production and marketing functions (Figure 3). Each

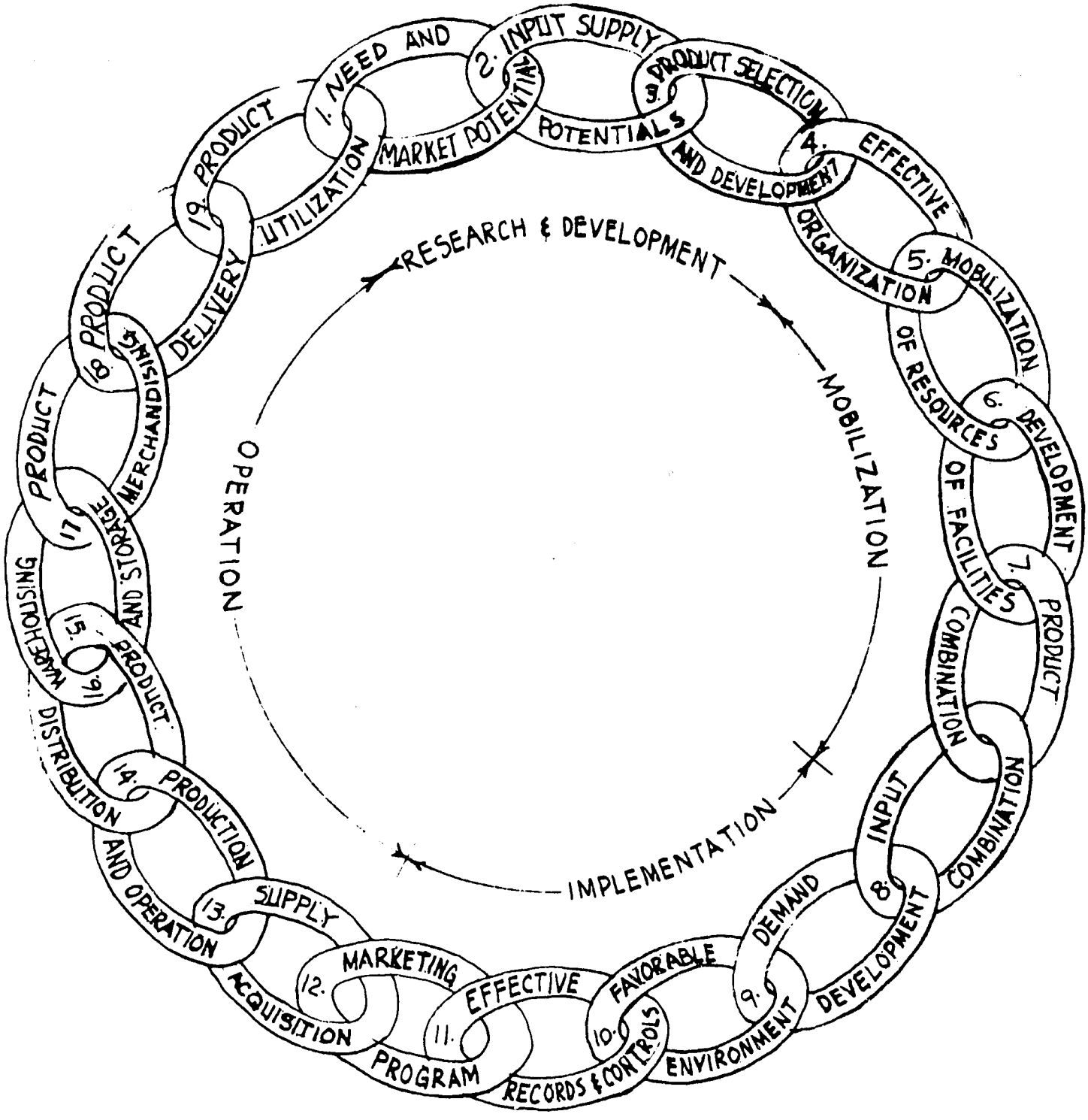

FIGURE 3. CHAIN OF KEY ACTIVITIES FOR PRODUCTION AND MARKETING FUNCTIONS

of the major links shown in Figure 1 may be visualized as a bracelet of 19 smaller links. The smaller links represent the key activities required for effective performance of each of the production and marketing functions.

Three of the links--(1) determining need and market potential, (2) projecting input supply potentials, and (3) product selection and development--represent research and development activities. The next four, extending from (4) developing effective (business and industry) organization through (8) improving input combination (least cost input mix), represent mobilization activities. These are followed by the four implementation activities, (9) demand (and supply) development through (12) developing effecitve marketing programs. The last seven are operational activities, extending from (13) effective acquisition of (input) supplies to (19) insuring effective product utilization (by ultimate consumer).

The two ends of the activity chain are linked because the last link, product utilization, leads directly to changing needs and market potentials. In a dynamic development setting, the entire chain represents a continuous circular flow in a clockwise direction. A weak or missing link anywhere in the chain can interrupt this flow and prevent achievement of development goals. The weakest link in the big chain (Figure 1) becomes the weakest link in the bracelet making up each of its links. Is it any wonder that development programs occasionally fall a bit short of target?

Each of the key activities potentially is subject to rigorous planning, execution and control. A substantial body of knowledge has

been developed for direct application to each of the links portrayed in Figure 3. Conceptually, the entire chain of key activities could be based on supporting operational models for planning, execution and control of each link.

The same chain concept can be carried to additional levels of content detail. Each of the key activity links in the chain portrayed in Figure 3 involves a series of specific steps of sub-links. Each of the links represents a specific subsystem which is made up of still smaller subsystems. The performance of the master chain (Figure 1) is ultimately limited to the capability of the weakest link in the tiny bracelet making up each link in the activity chain portrayed in Figure 3.

The Check-Sheet Approach for Identifying Crucial Activities

The key activities making up the chain in Figure 3 can be arranged in columnar fashion and related to specific functions, operations or products to form a check sheet for finding the specific links in the chain requiring emphasis for effective development. Figure 4, Check Sheet of Key Activities for Food System Development, is an example. The check sheet can be applied to each major production or marketing function for a given group of food products in a country. The appropriate specific functions, operations or products making up the major function in the food system of concern are entered at the top of the columns. For example, if the check sheet is applied to rice milling, the column headings might be (1) procurement and assembly, (2) classification and grading, (3) drying and conditioning, (4) rough rice storage, (5) handling and conveying, (6) milling and packaging, and

FIGURE 4. CHECK SHEET OF KEY ACTIVITIES FOR FOOD SYSTEM DEVELOPMENT

Food Product(s) _____ Production or Marketing Function _____

KEY ACTIVITY	SPECIFIC FUNCTION, OPERATION OR PRODUCT						
1. Measuring Need and Market Potential							
2. Projecting Supplies of Needed Inputs							
3. Product Selection and Development							
4. Developing Effective Organization							
5. Mobilizing Resources							
6. Developing Needed Facilities							
7. Improving Product Combination							
8. Improving Input Combination							
9. Developing Demand (and Supply)							
10. Establishing More Favorable Environment							
11. Implementing Effective Records and Controls							
12. Improving Marketing Programs							
13. Effective Acquisition of Supplies							
14. Effective Production and Operation							
15. Effective Product Distribution							
16. Effective Warehousing and Storage							
17. Effective Product Merchandising							
18. Effective Delivery of Products							
19. Insuring Effective Utilization of Products							

(7) rice warehousing and loading. The check sheet then would be used to identify those key activities for each of these mill operations which need attention in order to improve rice milling and the total rice system in the country.

The check sheet approach can be used by individuals or teams for preliminary evaluation of existing systems and discovery of "weak links" which need improvement. The approach also can be used at seminars and workshops as basis for discussion and interaction among business and industry people and others directly concerned with a given food system.

Visualizing food systems as linked steps of functions and activities which must be coordinated in order to supply expanding markets with needed food products well may be the starting point for building more effective programs of agribusiness development. It should help spot the key elements and linkages which need to be improved in order to make a food commodity system function effectively. It should help focus attention on building coordination between the links as well as upon balanced development of all key links. It should help reorient thinking toward production and distribution of food products to serve an identified market. It should emphasize the merits of approaching agribusiness development on a food commodity system basis rather than on a project by project basis. If it will help to achieve these things, it seems to us that the food chain concept is worthy of greater exploitation in development programs.

SUMMARY OF GROUP DISCUSSION

The participants generally agreed with the concepts of the commodity system approach and the basic links of the food chain. Most of the discussion centered on the types of problems usually encountered in trying to apply such an approach. The main points brought out in the discussion include the following:

1. There is a concern that a donor agency normally cannot do a total system study. Typically studies are project oriented. We therefore deal only with the project and closely related parts of the system.
2. Even if the planning is not specific-project oriented, we still tend to study only part of the links of the food chain --presumably the weak links. This introduces the problem of which links are weakest, and it is hard to agree on priorities.
3. Interaction of groups (donor agencies) would help provide a better understanding of the total system planning problem.
4. In relation to the food chain functions it seems that past efforts of AID (and others) have stressed input development and production at one side and nutrition at the other. There has been much less done with the intermediate functions, e.g., processing, product marketing, etc. A better balance seems needed.

APPLYING THE COMMODITY SYSTEM APPROACH
THE CASE OF CENTRAL AMERICA

Leonard M. Wilson
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APPLYING THE COMMODITY SYSTEM APPROACH
THE CASE OF CENTRAL AMERICA

Leonard M. Wilson

I have been asked to share some of the implementation experiences of an AID sponsored program with five Central American countries under contract with Harvard University. In brief, the program involves the export of fresh non-traditional fruit and vegetable products, e.g., cucumbers, melons, okra, to the United States. An agribusiness commodity system approach was applied as an integral part of the program.

Development Objective

The development objective of the Central American program was to build viable export projects in Central America. The scope of the study was limited in two ways: (1) only fresh non-traditional fruit and vegetable products (excluding bananas) were considered, and (2) only export prospects into the U.S. were explored. These constraints were simply limitations of this particular study and not indications that other types of products or other export markets might not also provide equal or better opportunities.

Within this broad setting, involving five (5) countries and numerous prospective commodities, much planning and analysis was required: (1) production and supply capabilities in the Central American countries were assessed, (2) U.S. market potentials for various products were evaluated, (3) commodities were selected, and (4) export

projects for selected commodities were planned. Next came the principal aim of the program--to implement the proposed export projects. These projects ranged in scope from building up and coordinating existing export activities to primary development of exportable fruit and vegetable products including production, packing, transport, marketing, finance and other assistance activities.

Later, I will outline some of the planning steps and discuss some implementation experiences which have implications for development planning. First, however, I would like to suggest our conceptual framework for applying the commodity system approach.

Conceptual Framework

The basic components or links in a commodity system have been presented earlier, so I will not dwell on the production-to-consumption functions of the food system. However, the conceptual framework for applying the commodity system approach encompasses at least four additional major factors:

1. National goals and policies. National goals and policies have their foundation in theory; but related national priorities, plans and objectives are in practice quite relevant to development projects. Application of the commodity system approach must be planned in relation to such national conditions.

2. Institutional Environment. The institutional framework (national and multi-national) sets the climate and major determinants of success for development. Institutions are also the primary interface between the public and private

sectors, which is critical for implementation activities.

3. Structure of the commodity system. The commodity system is basically an in-line sequence of major functions which must be performed for the system to operate. I prefer to think of this as a vertical structure, but the emphasis is that an ordered sequence of actions must be taken to produce, process, market and distribute food for consumption. The nature of the existing structure of a commodity system in a developing country is often a major constraint for short-term development.

4. Coordinating linkages. Coordinating linkages (transport, finance, communications, etc.) that tie together the steps in a food chain are vital to the commodity system. They are perhaps more important than any one step, per se. Mobilization of the food chain requires the overlay of coordinating linkages throughout the food system.

Application of the commodity system approach in planning, implementing and evaluating agribusiness development projects and programs necessarily involves the above factors. Hence, these factors are conceptually a part of the framework of study; but more important, they may involve the most critical limits for successful implementation of a development plan.

Program Features and Some Implementation Experiences

As indicated above, one major area of study toward developing viable export projects was to assess the supply potential of each of

the five Central American countries and/or their combined potential. As one would expect, we evaluated the fresh produce industries in each country. Primary considerations included production and production capabilities, domestic consumption and needs, export practices currently operating and the future outlook of the fresh produce industry.

In general, the commodity systems of concern were at embryonic stages of development in all countries. Most often there were two extremes of development--a subsistence-type of production of basic products, and a component of organized commercial production geared for export. There was little modern development in between these extremes. This general condition made it difficult to rapidly increase the export production of quality produce above existing levels.

The fresh produce commodity system also was assessed in relation to the national priorities of each country and in relation to the agribusiness sector in general. National priorities for the type of development sought included combinations of factors such as foreign exchange, employment, income distribution and land reform goals. While these relationships were recognized, more effort was needed to better relate and coordinate the export projects with respect to these national priorities.

Among the five countries, the total agribusiness sector was found to vary in size, structure and composition. In this basic setting no one plan or solution was expected to work for all countries. In fact, the specific export projects planned were all different with respect to both the commodities involved and the agribusiness setting for the commodity system.

In addition to studying and planning for development in each of the Central American countries, it was necessary to assess the U.S. market potential for each of the prospective commodities. The types of analysis involved here were primarily traditional economic assessments. These assessments of U.S. market potentials included the following factors:

U. S. Market Potential Study

Dynamics of the System

1. Demand
2. Domestic supply
3. Imports
4. Government regulation

Structure of the System

1. Retail distribution
2. Produce terminal markets
3. Shipping-point markets
4. Growers

Coordinating Linkages with Central America

1. Transport
2. Finance
3. Communication
4. Contracts

Summary

1. Basis of market opportunity
2. Critical factors

In assessing fresh produce demand/supply balances in the U.S., we confirmed that the best marketing opportunities were in the winter months in the U.S.--which then coincides with the best growing season in Central America. Also, competition for markets and demand potentials were greatest along the eastern seaboard--which is an economic advantage to Central America relative to other exporting countries

which might serve this market, e.g., Mexico. Actual produce markets to be served included both terminal and shipping-point (largely chain stores with 70-75% of total volume) markets. The latter markets are easiest for the exporter to serve, and the trend favors shipping-point marketing.

Based upon these basic economic findings regarding U.S. market potentials, generally favorable export opportunities existed for the Central American countries. However, as indicated in the above outline, further evaluation was needed concerning coordinating linkages with Central America. As examples: (1) reliable ocean transport was a critical link in planning export projects; (2) financial capacity to ship produce and assume risks of loss had to be provided; and (3) communications had to be established throughout the food chain to assure product delivery for the "target" markets.

At this stage in the development planning process, we were in a position to select commodities and plan specific Central American export projects. Cucumbers, melons and okra were selected as the principal commodities for development. Operational plans were made and implemented.

Operational activities involved virtually all facets of the food system, including production, packing, transport, marketing, finance and technical assistance. Many problems were faced and at least partially overcome. One example was the need to pack produce to meet U.S. grades and standards. In the developing countries this becomes a major communications and training problem. Also, systems and facilities for grading are generally inadequate.

I have attempted only to sketch the type of effort and some implementation experiences involved with the export projects in Central America. However, in order to focus more on implications for development planning rather than specific problems or bottlenecks, per se, I would like to offer some "generalizations" for discussion. Additional problems and experiences encountered in the Central American case are involved implicitly in these generalizations.

Implications for Development Planning

The essence of development planning, and of applying a tool such as the commodity system approach, is to find ways to identify both potential opportunities and bottlenecks, in sequence, throughout the developing food chain. The case of Central America has provided many experiences and a useful base from which to suggest implications for development planning.

Some of the main factors which I think are generally applicable for development planning include the following:

1. Development Learning Stage. In the Central American case, even following implementation of the export projects, critical problems were found to persist in fresh produce production and with effectively linking production to the remaining commodity system. Part of the problem is simply that a transitional learning stage is involved and should be anticipated.

By the same token, greater efforts are needed to provide requisite education and training to accomplish the development objectives. The length of the learning period can

vary markedly depending on provisions for educational and technical support. A related subsidiary problem stemming from the learning stage is a general need for intermediate credit to carry producers through the early periods of development.

2. Communications. Many agricultural commodities, especially fresh produce, need to be carefully scheduled from planting throughout the production-processing-marketing-distribution food system to arrive at the desired "target" market. In developed economics such scheduling is communicated readily and sometimes merely implicitly understood from past experience. However, in the developing country setting, such scheduling must be carefully coordinated and communicated at all levels in the food chain. The need to provide for adequate communications is often underestimated and critical bottlenecks too frequently are the result.

3. Public/Private Interface. A problem in project implementation, which is almost never fully recognized at the planning stage, involves interfaces encountered between the public and private sectors. Institutions can and do play a vital role in providing an intermediary interface where communications might otherwise falter. In development planning, we need to focus more attention on how essential public/private interfaces are to be accomplished. Many development activities often hinge upon mutual understanding and agreement between the public and private sectors.

4. National Objectives. Activities of donor agencies in the developing countries are sometimes not planned carefully in relation to goals and objectives of the developing countries. This can cause serious bottlenecks during project implementation. It should readily be recognized that opportunities for success are enhanced by coordinating projects with national plans and objectives. In general, relationships between specific projects and national objectives need to be more carefully planned and coordinated.

5. Coordinating Linkages. Among the most critical problems likely to be encountered in implementing projects are interrelationships between and among links of the commodity system. We often may find the problems of coordinating linkages to be more critical than efficiency problems within a given link of the commodity system.

Consequently, more conscious planning and development efforts need to be given toward providing coordinating linkages. These include communications, transport, finance and other services which affect the sequential flow of product within the commodity system.

Group Discussion

There was general agreement and appreciation of the implications for development planning presented in conclusion. A suggestion was made to establish a close tie between Research and Development efforts

and Implementation efforts, which are too often separated. Implementation experiences indicate the directions of needed additional research and development planning.

Another suggestion was that a Marketing Board-type of organization might be a useful entity for determining limiting factors in a commodity system. If properly organized it might also provide services to participants in the food chain.

Discussion and comments to questions included the following summary items:

1. The commodity system approach preferably would have been applied to the Central American domestic markets as well as to the export segment of the food chain. However, the scope of study did not include this application. Within each country, the domestic goals are varied and unique results would be expected for each.
2. Priorities for Central America were not the goal of the development program (except for the export commodities selected). Generalizations from the study, or lessons to be learned, are in methods, not in the particular bottlenecks which emerged.
3. Technical or policy variables may or may not be substitutes for private entrepreneurship in this type of development program. Oftentimes these variables are complements rather than substitutes.

MOBILIZING THE CONCEPT OF

MARKET ORIENTATION IN SPACE, TIME AND FORM

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MOBILIZING THE CONCEPT OF MARKET ORIENTATION IN SPACE, TIME AND FORM

Richard A. King

Agribusiness firms play a central role in any effort to provide more effective coordination of agricultural production and distribution systems. Potential improvements in marketing efficiency, whether achieved through policy decisions taken at the national level or through individual agribusiness decisions, can be formulated in terms of their impact on product prices and trade flows through the system. Economic concepts that explicitly take into account the space, time and form dimensions of these prices and flows will provide new insights concerning actions which may be expected to contribute toward identifiable short-run and longer-term goals of developing countries.

Introduction

Business firms engaged in the assembly, processing, storing and distribution of agricultural products play a central role in determining the rate of development of the agricultural sector in the developing countries. Furthermore, the success of quasi-governmental or publicly-operated entities engaged in agribusiness activities depends to a large extent on effective application of the same principles that lie back of comparable decisions by private business firms.

While technological development and innovation are generally regarded as having a high payoff in the developing countries, clearly

the rates of adoption and the levels of payoff depend on economic circumstances in the individual country setting and therefore are quite "location specific."

In such environments, economic science can provide the framework (a) for evaluating the present situation, (b) for the planning of short and longer run development plans and proposals, and (c) for designing effective methods of implementation. Formal economic concepts or "models" can be employed to test alternatives and guide the selection and implementation of development strategies and programs which are location specific to countries, to commodities, to markets and to areas. We must mobilize these concepts if we are to be effective in developing food systems.

The need for mobilizing economic concepts and market-oriented models can be illustrated by considering a few specific questions dealing with agricultural marketing in Peru. A new agricultural area in the Huallaga Valley is in process of being opened for settlement. It is located on the eastern edge of the Sierra region and will be accessible upon completion of a highway across the Andes close to the Ecuadorian border. In time, the valley transport network will be tied into the central highway to the Amazon River from Lima. What type of marketing facilities should be planned for this area? Clearly this depends upon the products that will be produced in the Valley. But this mix depends in turn upon what products will be most profitable, given the likely cost of inputs and prices received for farm products. Some procedure is needed to forecast these prices and costs before the region is fully settled. Since surveys of existing markets can-

not be made, a conceptual model must be used that will make it possible to relate prices in existing market places on the coast to future local markets in the Huallaga Valley.

Would a processing plant built in Tarma improve the returns to orange production in the area? Again, local market prices are not available so that a conceptual framework for projecting processed orange product prices must be relied upon in order to compare the potential profitability of a processing plant operating at alternative output levels with recent experience gained in the sale of fresh oranges in the Lima area.

Would new potato storage facilities in the Sierra increase incomes of farmers? In this situation it is necessary to compare recent seasonal changes in potato prices with those that might be expected if various proportions of the crop were to be placed in storage. Consideration must be given to availability of competing supplies from other parts of the country as well as to the costs of holding potatoes for varying lengths of time. Again one must rely on a conceptual framework which is localized to the specific conditions in order to answer this kind of question.

The Space, Time and Form Model

Among the economic concepts which are available for evaluating alternative strategies for developing food systems, we find that the model for market equilibrium in space, time and form is the most useful. Using this model it is possible to study the existing situation and to plan specific development proposals. The equilibrium market model can be described briefly as follows. Prices in different geographic areas of a country will differ by not more than the cost of

transfer from surplus to deficit areas. Within a given market area, prices will differ exactly by transfer cost from point of production to point of consumption. Where this condition does not hold, multiple markets are said to exist. Similarly, prices at one point in time will not exceed prices in a previous point in time by more than the cost of storage. Failure of this condition to hold is evidence of distinct markets in the time dimension. Finally, the price of a product will differ from the price of another product derived from the same raw product by no more than the cost of processing. We thus have a model which describes price relationships among geographically separated points in space, among different points in time, and among alternative forms of a common raw product.

Is this model an adequate representation of the product markets observed in developing areas of the world? It is clear, for example, that a self-sufficient agriculture is substantially different from an agriculture in which farm products are produced primarily for exchange. Similarly, in a handicraft industry artisan goods may be sold on order instead of being mass produced for the general purchaser. In these two situations it is quite possible that price plays a relatively minor role in short-run decisions. On the other hand, there is evidence that, if markets are functioning effectively, producers and marketers everywhere will respond to price incentives. The market equilibrium model can be a useful concept for development even when it does not closely describe existing conditions.

Another factor that can affect the role of price is the pattern of ownership of production facilities. We may find, for example, that absentee ownership or communal ownership will result in decision-making procedures different from those found where owner-operators predomin-

ate. It is also possible that public policy builds into the market price system certain types of inefficiency. For example, prices paid to producers of Peruvian rice may be fixed at a uniform level throughout the country as a result of public price policy decisions. Finally, we may find that discontinuities exist in market price relationships. The equilibrium market concept permits us to estimate the costs of such "imperfections", and provides a framework for investigating the causes of the imperfections and alternative ways of improving the existing food system.

A recent study of regional rice supply and demand relations in Peru will illustrate how the equilibrium market model might be used to measure the importance of location and the relation between transfer costs and regional price behavior. The approximate location of rice surpluses and deficits is shown in Figure 1. Marketable surpluses are concentrated on the north coast, the south coast and in the high jungle while the rest of the country is largely deficit. In addition to the domestic supply of 125,000 metric tons, imports of nearly 50,000 tons were purchased from abroad. Assuming that all imported rice was consumed in Lima, the domestic supply would be allocated as shown in the figure, given the transfer costs shown.

Rice prices in each area can be expressed as premiums or discounts relative to the Lima price. In the North Coast the price would be that in Lima less 171 soles per ton or S/.-171. In the high jungle the price differential would be S/.-458 and in the low jungle S/.-94. Although the South Coast is slightly surplus, the price in Camaña is S/.229 higher than that in Lima. In the deficit areas price differentials are S/.-143 in the North Sierra, S/.372 in the Central Sierra,

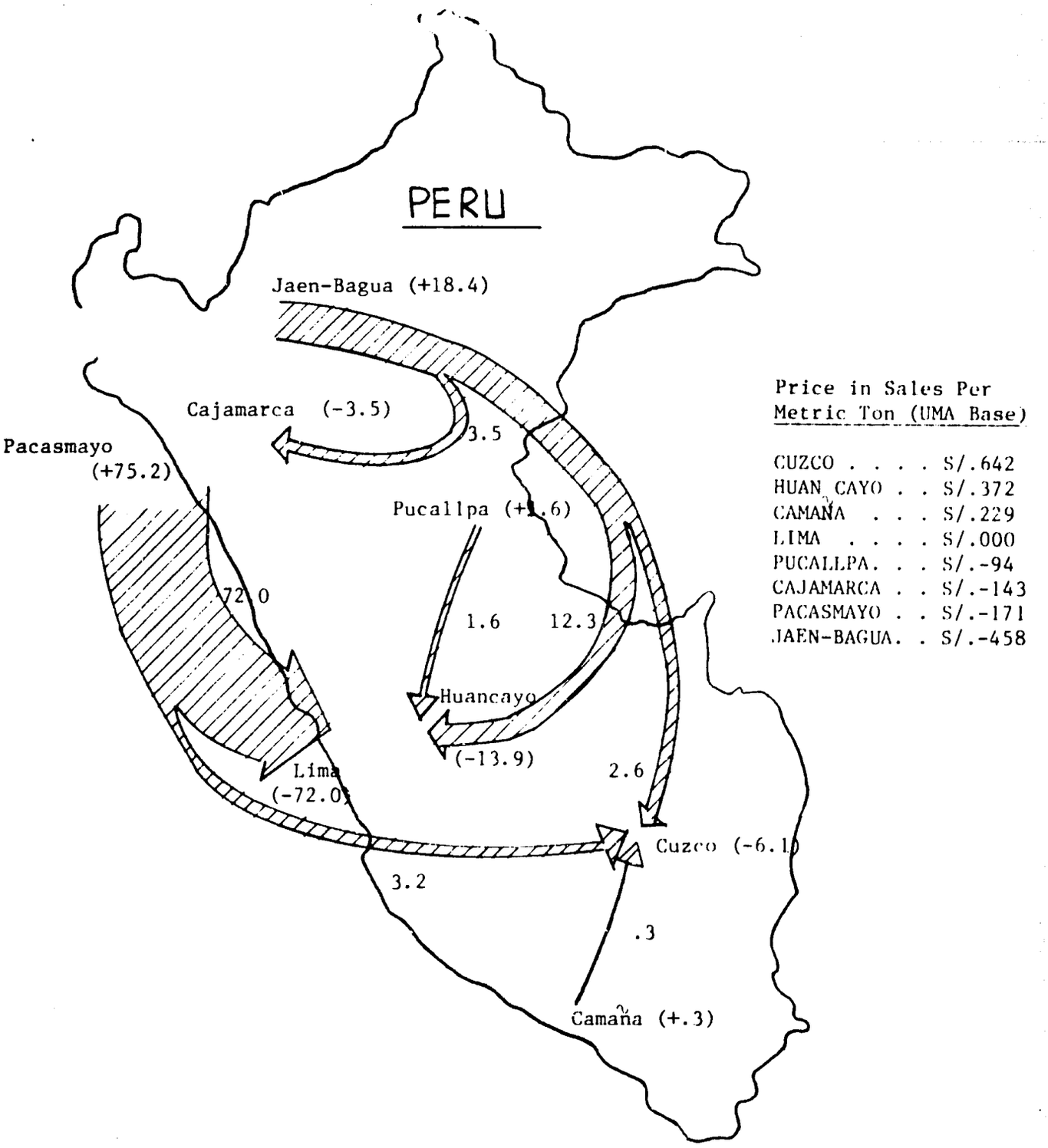

Figure 1. Allocation of rice supplies and regional price differentials, Perú

and S/.642 in the South Sierra. Under equilibrium market conditions prices would thus rise sharply from north to south reflecting greater distances from major surplus areas.

In this example we have shown how transfer costs may be used to identify optimum shipping patterns for rice. But we can go further than identifying product flows to show the price relationships that would be expected to exist, given that prices in consuming and producing areas are tied together through transfer costs. Should prices differ by more than transfer costs, there would be an incentive for new shippers to buy in the low price area and sell in the high price consumer center. This action would influence market supplies, raising prices in the area from which the supplies were withdrawn. Equilibrium would be achieved as price in that area rose and the heavier supplies on the consumer center depressed price there.

Mobilizing the Model for Development Programs

We turn next to utilization of the model for food system development. Three facets of development strategy must be considered--planning, implementation, and evaluation--PIE. The best starting place often will be an evaluation of the present situation. Some of the reasons why the equilibrium market model may not be consistent with the existing situation were discussed above. It is important to evaluate the reasons for the failure of the two to coincide before action is prescribed. For example, if the decision making process of producers and marketers is not price responsive or if the ownership of production facilities has an important role to play in determining the effect of a price change, a completely different set of recommendations may be in order than if the reason for a discrepancy is

a specific public policy decision, lack of knowledge or imperfections in the operation of the pricing system itself. Evaluation then is a first step in the formation of a food chain development strategy.

The second step is that of planning. In the case of market-oriented food commodity systems the planning process begins with identification of marketing regions. For each of these regions it is necessary to develop projected equilibrium prices in space, time and form as described above. Given these projected price relationships as base, more effective regional development plans can be prepared. Some plans will be of a short-run variety in which existing plant capacity is regarded as fixed while others will be of a long-run type with expansion or complete reorganization of existing marketing facilities under consideration.

The third and equally important component of strategy is the implementation of these plans. The implementation of plans may be the responsibility of the public sector or the private sector, or both, but in any case plans must be sufficiently specific so that the implementation process is clearly spelled out.

Market development strategy must include the three steps of planning, implementing and evaluating. The best point at which to cut into this cycle will vary with time and place. The three steps represent a continuous sequence that is never fully completed but, when successful, leads to the upward revision of goals and improvements in the execution of the revised plans.

Selecting Development Strategies

The equilibrium market model suggests that food system development strategies have identifiable space, time and form dimensions.

Strategies dealing with the space dimension may include choices of whether highway X or Y should be built and, if both are to be built, which should be built first. Such a choice will depend on how product prices or costs can be expected to change upon completion of the project. Strategies influencing product form may include decisions to build a processing plant or to construct assembly market facilities, thereby enhancing the net price received by producers and improving employment opportunities in the area. The time structure of market prices may be modified by the construction of new storage facilities or by the provision of drying equipment and insect protection services.

The potential payoff to any commodity system development strategy can be measured readily in terms of the prospective change in the space-time-form configuration of market prices and the resulting product flows from producer to consumer. In addition, the impact of such improvements upon employment and income potentials in the affected region can be traced. Each of the three dimensions can be illustrated.

The spatial dimension of market prices can be described using what is known as a site-price surface. The basic idea is that prices received by producers will consist of the market price less cost of transfer from point of production to market. As shown in Figure 2, the farm price will be lower as the distance from farm to market increases. Viewed from above, the resulting price cone can be represented by concentric circles representing equal net prices of isoprice contours (Bressler and King, 1970, p. 126). Given two markets, each with its own site-price surface, it is possible to identify the boundary between the two which suggests the efficient allocation of products as between the two market centers (Figure 3). Changes in the

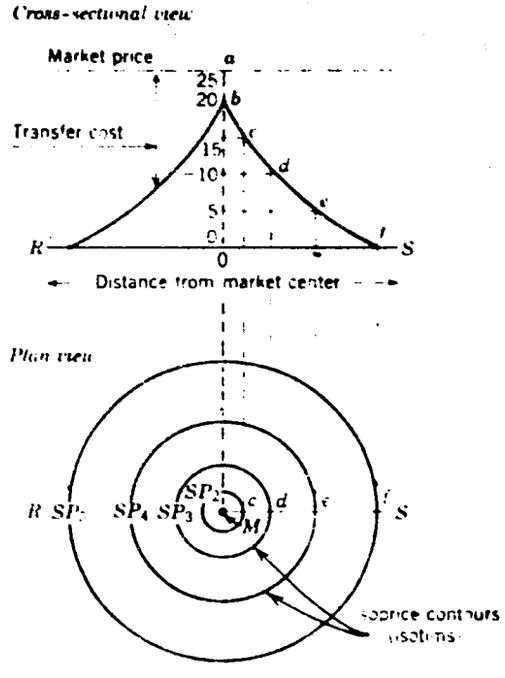

Figure 2. The site-price surface for a single market. (Bressler and King, 1970).

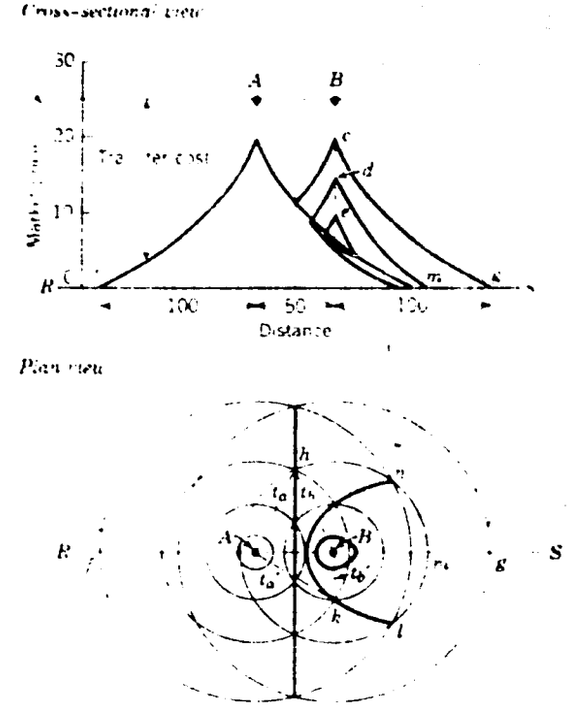

Figure 3. The allocation of production sites between two competing markets. (Bressler and King, 1970).

relative height of the two cones can be seen to shift this market boundary. Improvements in transportation systems resulting in lower transfer costs will raise the net prices received at each location and thereby encourage greater output and result in higher farmer returns.

Given the opportunity to market a product in two or more forms, the choice of most profitable form will be determined by the costs of processing. Optimum product form is established by comparing the net prices for each. Whether a processing plant will be profitable or not depends upon whether the net farm price for the processed product will equal or exceed that of the unprocessed product. An example of this type of choice is suggested by the dairy industry where a choice must be made among such forms as fluid milk, cream and butter in each producing area.

In the time dimension the cost of storage is the critical variable. In the equilibrium market, prices will differ by no more than the cost of holding the product from one time period to another. If the seasonal price rise exceeds the cost of storage then additional storage facilities would result in higher farm incomes. A well known illustration of this phenomenon is found in Joseph's interpretation of Pharoah's dream of the seven well-fleshed and seven ill-fleshed kine coming out of the river to graze. The wheat storage strategy which resulted is illustrated in Figure 4 with a portion of the crop in each of seven years being placed in storage to supplement the poor crops in the seven poor years which followed. A less complicated example is shown in Figure 5 with equal-sized crops in each year. Low prices are experienced at harvest with prices in succeeding

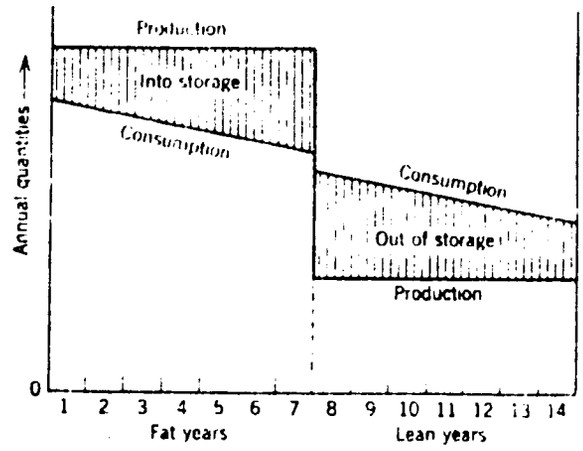

Figure 4. Production, consumption, and storage movements during seven "fat" and seven "lean" years. (Bressler and King, 1970).

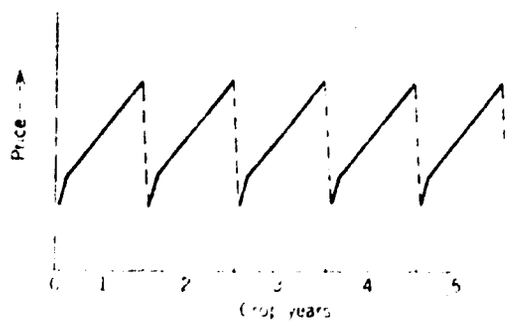

Figure 5. The seasonal price cycles over a number of years with uniform harvests and constant demand. (Bressler and King, 1970).

months rising exactly by the cost of storage, falling again at the time of the following harvest.

The final illustration, Figure 6, suggests how two or more dimensions of market price may be analyzed simultaneously. In the case of northeastern U.S. milk markets certain protions of the region profitably market milk in fluid form throughout the year. Other areas more distant from population centers supply the fluid market during periods of low production and sell milk in the form of cream during the flush season. Still more distant producing areas find processed products more profitable year-round. Selection of profitable milk plant designs clearly must take into account such spatial and seasonal characteristics of production and consumption patterns. Changes in supply and demand for milk and milk products over the past two decades have drastically modified equilibrium patterns shown in the figure, but the usefulness of planning data of this type for commodity system development decision-making is apparent.

Regional Development Strategies

To make effective use of limited resources it would seem to be desirable for both AID and developing nations to concentrate on designing food system development programs that are region-oriented. Manpower and monetary resources are unlikely to be adequate to simultaneously attack the problems of every region. The need for setting region priorities has been emphasized in a study of Peru (Coutu and King, 1969) and in many other places.

The second argument for regional priorities is that the benefits flowing from any food system development plan are highly region-

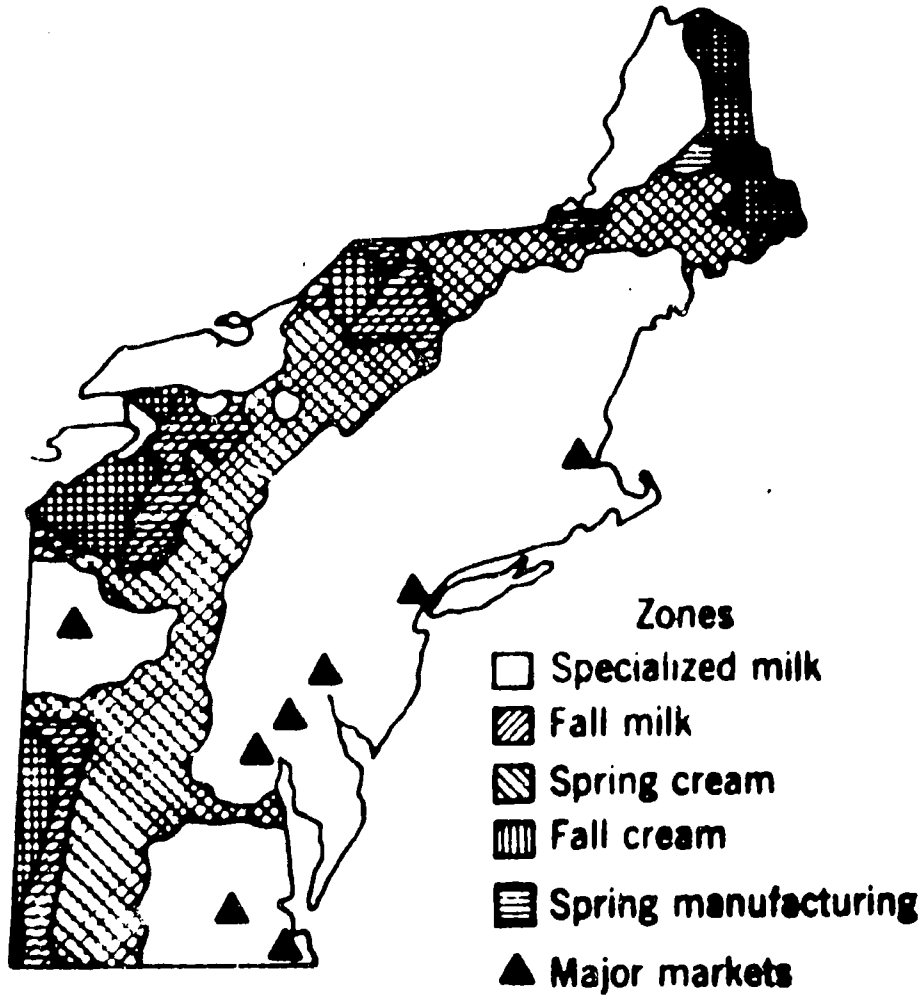

Figure 6. The efficient seasonal changes in milk, cream, and manufacturing zones for major northeastern milk markets, 1947 to 1948. {Source. William Bredo and Anthony S. Rojko, Prices and Milksheds of Northeastern Markets}.

specific. There is no single remedy that will solve every agricultural marketing problem. Variations in natural resources and relative prices are reflected in widely different product mixes and in location-specific opportunities for commodity system development.

Timing of critical development components can be much improved through regional food system development planning. The benefits that might be expected to accrue from new marketing facilities may depend upon the presence of technical assistance in appropriate variety selection and properly preparing products for market. Commitment to a package of marketing development components may be as critical as a package of farming practices to raise output. The mix of marketing components needed can be expected to vary widely from region to region.

Given the natural desire to see all parts of a nation move forward, consideration must be given to means for gaining acceptance for region-specific plans. Early efforts in a selected region might be offered as pilot or experimental marketing development projects from which lessons might be learned for later application in other regions. Failure to assure public support for region-specific commodity system development could endanger project investment plans that otherwise would have a high probability of success.

Relevance to AID Agribusiness Development Programming

Region-specific commodity system development programming based upon the space-time-form market models presented here might be incorporated in a variety of ongoing activities in AID. These include:

1. Design of feasibility studies.
2. Programs for training middle management.

3. Institution-building programs.

4. Timing of capital investment projects.

5. Evaluation of research base for development plans.

6. Planning for AID/host country specialist cooperation.

Without going into details as to how existing Agency activities might be modified, the argument presented in this paper has been that a market price oriented framework in which space, time and form aspects are explicitly taken into account can serve as a focus for planning, implementing and evaluating agribusiness development efforts.

Group Discussion

Much of the discussion focused on the recommendation that concentration be on the design of region-specific food system development programs. There was agreement that development programs for a country as a whole were hard to apply, but would region-specific plan be politically acceptable in the developing countries? In response, it was stressed that only through regional strategies are we likely to succeed with development programs. Resources have to be concentrated in order to establish effective operations. Region-specific planning does not exclude one region to the benefit of another, but priorities have to be developed. A sequence of development is important.

Another concern involved the use of prices in analysis as suggested, when the government sets official prices. In general, one

must estimate volumes of flow in each market segment and the price or value in each segment. A weighted combination or average price is implied for planning purposes. Where existing prices fail to reflect consumers' desires and demands, price surfaces in space, time and form can be simulated for the specific conditions from realistic local costs of movement, storage and processing. Accurate price simulations can be as useful as free market prices as a framework for evaluating, planning and implementing programs for development.

Further discussion emphasized the need for related infrastructures in development planning. For example, sophisticated input supply operations are needed to produce uniform products for improved markets, including processing. Such infrastructures are vital elements in region-specific development strategies.

ESTABLISHING SUPPORTING NATIONAL PROGRAMS FOR AGRIBUSINESS DEVELOPMENT

George K. Parman
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ESTABLISHING SUPPORTING NATIONAL PROGRAMS FOR AGRIBUSINESS DEVELOPMENT

George K. Parman

The development of agribusiness and food systems in the developing countries is not an easy matter. There are many restraints, constraints, and hurdles to overcome. The expressed intent of this paper is to deal with efforts in developing agribusinesses, and to consider supporting national policies and programs that would encourage agribusiness development. An implication in this is that national policies and programs are the dominant factors in agribusiness development. They are important, but not necessarily dominant. Other factors can be equally significant, and may actually affect the setting of national policies. The emphasis intended is that national policies and programs can and should provide a supporting framework for agribusiness and food system development. This belief and awareness comes from personal experience in dealing with and organizing agri-industrial enterprises in the various developing countries.

The Setting

The agribusiness component is an essential part of any agricultural development package. A viable agribusiness complex provides an expanded market for agricultural raw materials, as well as jobs, leading to a better distribution of income. Agribusiness development provides greater ability to deal with the many problems of growing urbanization in the developing countries. The industrial processing

of agricultural products, inherent in the agribusiness concept, also provides the means to reduce waste and to make more effective use of by-products in the food system.

While a considerable amount of rhetoric and effort have been expended by multilateral and bilateral donors in trying to establish agribusinesses in the developing countries or in trying to create a favorable climate for their establishment, the accomplishments to date have not been particularly outstanding. The private sector, where particular opportunities existed and where the governmental climate was favorable, has done far more in developing industries which have, on the whole, contributed to the economy of the country.

A very basic problem is often the inherent attitude of the people of the developing nation towards industry. It is not uncommon to find many Government officials essentially hostile on ideological grounds towards an Industry sponsored by the private sector and unable to understand the essentials of Industries needs on a socialist basis. One will also encounter the attitude that Industry is a source of inexhaustible tax revenue. The workers in the public operations may be unable to comprehend and accept the necessity for an "8 to 5" discipline demanded by industry.

A more serious problem is the lack of management skills and the lack of technical skills to run the enterprise. These problems are essentially ones of creating the institutions that will provide the training and the awareness of what is needed in terms of attitudes and training to conduct a successful industrial development. It must be engendered from within the country, not applied from outside.

Included in the general setting for agribusiness development in the developing countries is the basic need for national incentives for growth. The local entrepreneur seldom has privileges afforded to foreign investors, for example, in terms of taxes, subsidies, price supports and others. Governments have often failed to provide a favorable climate of needed policies, regulations, advisory services and other supporting programs for agribusiness and food system development.

Supporting National Policies, Regulations and Services

Basic problems of agribusiness development, such as described, can at least be partially overcome with national policies and programs which provide a favorable environment for development. More emphasis is generally needed in the developing countries to establish a framework of supporting national programs within which viable commodity and food systems can be developed.

Three categories of supporting programs which can be provided at the national level to foster agribusiness and food system development are: (1) public policies, (2) regulations, and (3) supporting services. Some examples of the types of programs and activities included in each category are briefly indicated as follows.

1. Public Policies. National (and state or provincial) public policies and programs are potentially strong means of providing the desired political and economic climate for agribusiness development. National incentive programs can be created to stimulate desired growth.

Subsidies paid for raw materials and products can be regulated to influence levels of production of specified

products. Taxes can be administered similarly to influence resource and/or product use.

Price support programs can be used to stimulate production and assure market stability over a specified planning period. Such programs, of course, require public capacity to store and regulate commodity flows, but such emphasis may be needed in the developing countries.

It should also be recognized that existing public policies may restrict food system development and changes may be required. Taxes and other restrictive policies which hamper the flow of commodities geographically and through the marketing system are examples. Furthermore, if not properly designed and administered, policies designed to benefit one link in the food chain may unintentionally restrict other links. This is sometimes the case of agricultural price support programs and/or consumer price ceilings on food products, for example.

2. Regulations. Another dimension of the policy framework invloves regulatory functions that the public sector should perform. Commodity grades and standards, transportation schedules and rates, and fair trade requirements in general are types of public regulation which can provide order and stability in the food system and foster growth and development.

Other types of regulations which may be needed to assure orderly development include: (1) import and export

requirements and quotas, (2) location and zoning requirements, (3) public warehousing regulations and inspection services, and (4) licensing and inspections of food handlers and processors. In all cases, the role of the government is both to foster development and, also, to protect the public interests.

Regulations should be aimed at making food systems operate effectively and efficiently, not as restrictive forces for the desired development. The regulations as a whole should establish the basic rules of the game, but within these rules give stimulation to agribusinesses. Excessive and/or uniformed regulation can be more damaging to agribusiness and food system development than inadequate regulation.

3. Supporting Services. The third class of national-level programs to stimulate growth and development is supporting public services. For example, in agribusiness development, market statistics and news services are needed. Planning and advisory (outlook) services are also desired. The actual grading and classifying of food commodities may also need to be performed as a public service.

More broadly, educational and extension services are needed to communicate new techniques and practices as they become proven. Training services are also generally essential throughout the agribusiness complex. National programs to create training institutes might be a valuable supporting service, for example. Institution development and related services represent another type of supporting service that

is needed particularly in applied research for agriculture and the food industry.

The supporting services to the food system represent a public cost to the developing countries, but the social benefits of key services can exceed the costs. Most donor agencies are willing to and have provided assistance to the developing countries in building supporting service programs. Sometimes, however, the development of the supporting services has not been integrated effectively with the total effort for developing food commodity systems.

Key Related Factors for Agribusiness Development

There are three major factors regarding agribusiness development itself which I believe must receive careful consideration as a basis for development. Supporting national programs are meaningful only when these factors or criteria have been met.

1. Adequate Markets. First, an agribusiness enterprise must have a market of sufficient size to occupy the production of a plant of economic size, so that the enterprise can make a profit. The developing world is full of plants set up to produce import substitution products, many of which are idle because the market was not sufficient to keep the plant running at economic capacity. The ones that have been successful are those meeting a large and dependable market in the development countries - for example, beer, cigarettes and flour.

2. Sufficient Raw Materials. The second criteria for agribusiness development is that there must be a sufficient amount of raw material available at an economic price to enable the plant to produce at a profit. Mittendorf, of FAO, in a study of the cause of failure of agribusinesses in Africa, found that in over 80% of the cases, inability to obtain raw material at an economic price was the primary cause of failure. In a smaller study of agribusinesses in the Far East I found much the same results.

In my opinion, based on observation in many countries, it is very difficult to establish a viable agribusiness when the raw material supply must depend solely on the output of small peasant farmers. Only a plantation source, utilizing intensive agriculture or a well organized cooperative, can provide the quantity, quality, economy and continuity of raw material needed to maintain the viability of an agribusiness. Perhaps other means can be found to organize the small farmers more effectively as producers; research in this area might be fruitful.

3. Assessment of Potentials. The third factor is accurate and realistic assessment of the market potentials. We are facing a very changing market, not only within countries, but internationally. The greatly increased purchasing power and demand in Japan, Europe, Australia and parts of South America together with the distribution logistics of the refrigerated truck, the shipping container, fast freighters

and the cargo capability of the jet airplane have revolutionized export markets for the developing countries. This makes it important to look at markets realistically, and not on the basis of past history. For example, there is an almost obsessive inclination to suggest the production of furfural from bagasse as a great way to gain value from a troublesome by-product of sugar. Unfortunately, no one goes beyond that to ask about the market for furfural, which is at this point, rather restricted. Similarly, starch is always suggested as a "great" outlet of cassava. Actually, cassava starch usage is limited and its growth rate is roughly that of a world population, mostly to use as a mucilage for postage stamps. On the other hand, the use of cassava pellets as an ingredient in animal feeds in Western Europe has gone from 400,000 metric tons in 1964 to over 1,600,000 tons in 1972, a figure several times larger than the figure for starch. The gain is the result of a changed market in Europe and the greatly increased use of formulated feeds.

A realistic assessment of the internal market is equally important. Where a product should be sold and where it can be sold may be two different things. Probably the most important factor in favor of the development of agribusinesses is the growing urbanization in many developing countries. The cities are growing and large numbers of people are coming into some beginning of a money economy. People in the cities are no longer able to live on subsistence farming.

They must buy all of their food, and their fuel. In these circumstances, the traditional marketing system and the attempt to prepare foods in traditional patterns breaks down. Industrial preparation becomes essential to meet the economic needs of the consumer. This can be seen: (1) in India, where industrially prepared chappattis and wheat bread are rapidly supplanting the home prepared chappatti, (2) in Malaya, where a sandwich has replaced rice for lunch, and (3) in the cities of Korea, Iran and elsewhere, where the convenience of industrially prepared foods is being demanded by the young people living in an increasingly urban environment. It is this market where the theories and the practicalities of agribusiness development will best apply, and the expansion of this market can provide the incentive needed to put agriculture in many developing countries on the firm economic footing it needs.

Group Discussion

The discussion focused on a general concern for training programs for small scale enterpreneurs. There was no disagreement about the need, but the most effective methods for providing training services were not clear. One idea was to link this type of training service into a development loan package with the training requirement as a loan condition.

A related concern was the need for strong supporting institutions in the developing countries at the local level to help administer gov-

ernment and aid-related assistance programs. Through such local institutions the above training needs might be met.

A common characteristic in the developing countries is that government leaders are often also leaders in industry. This condition must be recognized in developing supporting national programs.

Another type of consideration in the national policies and programs area is the legal structures in the developing country. Supporting legal services may be important in establishing agribusiness developments by local enterpreneurs.

FORMULATING EFFECTIVE ASSISTANCE PROGRAMS FOR FOOD SYSTEM DEVELOPMENT

Frank Meissner
Project Planning Specialist
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FORMULATING EFFECTIVE ASSISTANCE PROGRAMS FOR FOOD SYSTEM DEVELOPMENT

Frank Meissner

I want to commend the Agency for International Development for sponsoring and organizing this Agribusiness Planning and Development Conference. We are coming to grips with some of the basic problems and needs facing all donor agencies conducting assistance programs in the agribusiness field. The Inter-American Development Bank recently has become very concerned with these problems, and is in the process of re-appraising its capital assistance programs in agricultural marketing and agribusiness. We appreciate the leadership that AID is taking in this area of direct concern to all of us.

My remarks draw heavily on the work of an IDB task force on loan programs in marketing and agribusiness (see Medford Alexander "Investment Policies for Projects in Agricultural Marketing," paper on agricultural development No. 10, IDB, Washington, D.C., February, 1973) and on similar evaluation and planning by the World Bank (see "Agricultural Sector Working Paper," IBRD, Washington, D.C., June, 1972). However, it must be made clear that the author is solely responsible for the material presented. The views and suggestions expressed do not necessarily represent the offical policies and procedures of IDB, and certainly not those of IBRD.

Role of Agricultural Marketing in Food System Development

I am sure that all of us are coming to realize more and more that the improvement of agricultural marketing is an integral part of rural

development. This is true because agricultural marketing encompasses all those activities and decisions which direct the flow of both food and farm supply commodities from the producer to the final user. The marketing system also distributes the funds paid by consumers back to producers and directs the flow of information backward and forward among participants in the food chain.

It seems to me that the concept of food systems as developed by previous speakers adds additional dimensions to the central role of agricultural marketing and agribusiness in over-all agricultural development. We not only must be concerned with all those marketing functions which represent key links in the food chain; we must be concerned with all those coordinating functions and activities which tie these key links together among themselves, and to the production and utilization links as well. Finally, as indicated by Jerry Parman, we must be concerned with public policies, regulations and supporting services which create the economic environment in which the commodity marketing systems operate.

In the Latin American countries, and probably in developing countries in other parts of the world, major changes in marketing systems are required to bring about agricultural sector and food system development. Moves from largely subsistence or village economics to commercial regional and national marketing patterns place all kinds of stresses on existing marketing systems. For example, a 50 percent increase in food grain production in an area where farmers formerly consumed 75 percent of their own production may mean an increase of up to 100 percent in the volume thrown into the marketing system. Such increases may require drastic changes in marketing organ-

ization and structure as well as in supporting public services and regulation. Unfortunately, marketing development in this context is not as simple as making capital loans to build additional marketing facilities. If this is all we do, we are likely to end up with a less effective food chain than existed before the development and increase in agricultural production took place.

Posture of International Lending Agencies

International lending agencies serving Latin America have recognized the importance of agricultural marketing and agribusiness development for many years. For example, in its' 13 years of operation the Inter-American Development Bank has accumulated a loan portfolio of about $93.2 million for agribusiness development, distributed over 12 major agricultural marketing and agroindustrial projects. By mid-1972, outstanding agricultural marketing and agroindustry loans by the World Bank Group in Latin America and the Caribbean region amounted to about $103 million, distributed over 24 projects (from figures estimated by G. Schumacher of the World Bank's Agricultural Division, 5/22/73). Still, total capital loans for agribusiness development represent only about 25 percent of the total agricultural sector loan portfolio of the World Bank Group and only about 8 percent of the total agricultural sector loan portfolio of IDB.

While the over-all posture of both IBRD and IDB is favorable toward loans for agribusiness development, neither bank has detailed policy guidelines concerning marketing and agroindustry projects, and relatively little policy direction for capital loans oriented to complete food systems. General guidelines for the World Bank Group are

outlined on page 47 of the June 1972 "Agriculture Sector Working Paper" as follows:

> "In the case of smaller agribusiness projects, the most appropriate way of channeling Bank Group funds to such industries is usually through intermediate industrial financing institutions in the borrowers' countries. In the case of the larger projects, such as fertilizer plants, the most appropriate way may be to make industrial, rather than agricultural, loans.
>
> "Lending for certain other types of agriculture-related industries is more appropriately handled within the context of general agricultural lending. Projects of this type include private and public-sector grain storage operations, the provision of public wholesale grain markets and the expansion and improvement of grain and feed milling facilities, and crop processing, especially as part of integrated schemes for production, processing and marketing.
>
> "Other projects for agricultural industries which have recently been financed--and which possibly point to future trends--involve fresh fruits and vegetables. In such projects it is necessary to integrate investments in on-farm production, sorting and packing facilities and transportation (particularly refrigerated trucks and ships)"

The IBRD has no explicit guidelines for preparation of "Storage, processing and marketing" projects. The guidelines of IFC are being used for preparation of agroindustrial projects. The guidelines for farm global lines of crop and livestock credit also contain substantial sections on marketing.

The Inter-American Development Bank is in the process of formulating revised policy guidelines for marketing and agroindustry projects, giving more attention to such projects. The Medford Alexander task force report to which I have referred includes a number of recommendations to the Bank and its member countries, including the following:

1. More attention be given to projects for expanding farm output and related marketing projects as fully coordinated packages.

2. Associated by-product and raw material linkages be examined with a view to finding additional projects to accelerate the industrialization of agriculture.

3. Before financing individual marketing projects, have assurance that complementary parts of the system are included or assured from other sources.

4. Priority be given to marketing projects with a high local raw material utilization ratio and to those which lead to forward integration of farm production or natural resource exploitation.

5. Special attention be given to projects that reform and modernize over-all marketing systems.

6. A strategy of sequential lending be adopted to provide capital and technical assistance in logical succession for orderly marketing development through time.

7. More attention be given to vertically integrated projects, especially those which represent forward integration by producer groups in joint venture with marketing agencies.

8. The Bank's surplus commodity policy be relaxed for agribusiness projects so that transformation of surplus commodities into higher value products with export potentials is encouraged.

9. Marketing projects be financed primarily with conventional funds of the IDB, but that projects for marketing system and infrastructure development might be financed by a combination of conventional and concessional funds.

Distinctive Characteristics of Agribusiness Projects

In order to create viable loan programs to support food system development we need to recognize that there are distinguishing characteristics of agricultural marketing and agroindustry operations which affect the requirements of the borrower. Let me suggest three important ones which I believe are common to most agribusiness operations.

1. Large working capital requirements. The characteristic high value of the raw material relative to the total value added at each link in the market channel creates unusually large working capital requirements in agribusiness operations, even when the turnover of inventories, accounts receivable and other current asset accounts is rapid. If product storage for any period is common for the operation (as in grain milling and handling, for example), then these high working capital requirements are increased substantially more. It is not unusual for the average working capital requirements in typical agribusiness operations to be equal to or greater than the total capital cost for marketing or processing facilities.

2. Lack of quality control on raw material. The very nature of agricultural production, involving many independent producers coupled with the uncertainties of weather, insects, diseases and other pests, makes raw material quality control particularly difficult in most agroindustries between the farm gate and the final consumer. Except under plantation and other commercial farming operations, the problem is much more serious in the Latin American countries than in the USA,

for example. Farms are small and non-mechanized, harvesting and field transport is done by hand, farm drying and conditioning is rare, chemical pest control is imperfect, and even where irrigation is available, water management and control is not ideal. Furthermore, at the first assembly market, grading and classifying (and establishing prices on the basis of quality) leave much to be desired. These conditions combine to give agribusinesses in the developing countries relatively little quality control over raw materials.

3. High assembly costs. High costs of assembly and procurement are typical of most marketing agencies in Latin America. Producers are small and scattered, farm to market roads are limited and communication of procurement prices and terms is difficult. Furthermore, year-to-year fluctuations in production mean that the fixed costs of procurement have to be spread over a limited volume in all but the banner years.

These three characteristic problems of marketing operations in the developing countries are not solved by financing modern and expensive marketing facilities--in fact, large modern facilities may make these problems more difficult for operating management to handle. The problems can be reduced only through attention to other dimensions of food system development such as: (1) public warehousing and a negotiable warehouse receipt system, (2) grade standards and effective grading systems, (3) improved market news systems, and (4) improved roads and assembly systems. In addition to these dimensions which can help reduce the problems, much more attention must be given to training

operating personnel on how to cope with the problems as modern marketing facilities are developed.

Current Problems Limiting Loan Effectiveness

There are a number of problems currently limiting the effectiveness of agribusiness development loan programs in Latin America. A major problem for some time has been the difficulty in identifying, formulating and planning viable projects which are bankable. In an attempt to solve this problem, IDB and others have gone to pre-investment loans to finance feasibility studies so that experts can be brought in to help formulate sound projects. But even with sound feasibility studies, there are relatively few in the developing countries who can put together an investment package and present an attractive loan application. The pre-investment loan is only part of the answer.

Another problem has been in relating individual projects to the needs for developing total marketing or food systems. The AID-Michigan State University LAMP program in Northeast Brazil, Colombia, Puerto Rico and Costa Rica is one attempt to look at the whole food system and identify the flows, margins, inefficiences and barriers. The studies have been very good, and have helped to train Latin American marketing people, but they have been expensive and time consuming. From the standpoint of providing a base for generating sound loan applications, the approach puts too much emphasis on description of existing systems, and not enough emphasis on identifying specific needs for new projects. Basic benchmark studies such as those of LAMP probably are needed once every 10 or 15 years, but they are not the complete answer for generating effective agribusiness loans.

All of the international lending agencies have come to realize that the development of marketing facilities without the parallel development of people to manage and operate them causes all kinds of problems. All of us have helped to finance our share of "white elephant" under-utilized marketing facilities. Now we tie in training and personnel development with the facility loan, either as a part of the loan package, or as a loan requirement, or both. As essential as this is, it is not the complete answer either. Many of the training programs to date have left much to be desired, but the basic problem is that personnel training programs alone without other essential components won't do the whole job.

A final problem which deserves mention is the needed parallel personnel training and over-all improvement of domestic development banking in the developing countries. In Latin America, strides are being made through the Masters program in development banking at the business schools, such as at the Central American Business School backed by the AID-Harvard program. But academic training, no matter how good, is not enough. We must get effective interaction between the business schools and the domestic banking and agribusiness industries. We need specialized mini-courses on the various dimensions of project development, including application of specific guidelines for preparation of loan applications.

It is these kinds of problems causing a shortage of bankable loan applications, not the shortage of capital loan funds, which really limit the contribution of capital assistance programs to agribusiness and food system development. We must find a way to integrate all of these factors into capital loan programs.

Mobilizing Effective Marketing and Food System Loan Programs

We have concluded in IDB that we must put all of these elements together--pre-investment loans for feasibility study, the total food system approach, personnel training and development and applied training in development banking--in a combined "soft ware" package to be added to facility "hard ware" loans if we are to get the job done. The concept of the "global loan" offers one promising approach. The global loan would encompass one or more complete food systems in a region, country or area. It would contain specific conditions regarding: (1) organization and administration, (2) requirements for sub-loans, (3) requirements for and persons to conduct feasibility studies, and (4) requirements for persons to present loan applications.

As a specific case in point, IDB now is in the process of negotiating a "Global Agroindustrial Line of Credit" with Central American countries. The loan would represent a major commitment of funds, and encompass as many as 40 potential individual agroindustrial projects. Many details are still to be worked out, including the executor of the line of credit and sub-loans. As a financial intermediary for private banking institutions in Central America, the Central American Bank is the logical institution for this role. But the Bank's charter imposes some limitations, and is due for change in two years. Furthermore, a way must be found to help the Bank build an adequate staff for administering long term loans. These things illustrate the kinds of problems involved with implementation of the global loan concept and the imaginative approach that must be taken to overcome them.

Other conditions for the "Global Agroindustrial Line of Credit" are pretty well worked out. The characteristics and needs of the

food systems involved are defined, at least in general terms, thanks to the past efforts of FAO, ROCAP, IBRD, the USAID's, other donor groups coupled with planners in the host countries. Many of the national and multi-national policies, regulations and supporting services are well along, and IICA in particular will be working with the national governments in these areas. The necessary funding and requirements for specific feasibility studies will be included in the global loan.

Some innovative steps are included in the loan in attempt to beef up the preparation of specific sub-loan applications. A total of $500,000 over a four-year period is to be included for specialized mini-courses at the Central American Business School. Those formulating specific projects and preparing loan applications will be urged to participate in the training on a voluntary basis. If a loan application is not adequate, then the applicant will be required to take the six-week executive short course and the specific mini-courses covering the areas of his demonstrated weaknesses.

I am sure there still will be some problems with this global approach to agribusiness development loans. It will be difficult to cut out the unnecessary duplication in efforts among those with the specialized talents needed--where we have so little depth in the developing countries. It will be hard to find and attract qualified entrepreneurs to take advantage of the pre-investment consulting and formulate specific projects for loan application. It will be hard to bridge the gap between the academic atmosphere at the university business school and on-going agroindustry, especially with the virtual absence of Extension programs in agricultural marketing in Latin

America. But if the concept of the global loan is sound, and if we have integrated the key components of viable agribusiness development, then the program should be more successful than those of the past.

Need for a Multi-Donor Coordinating Agency

I would like to conclude these remarks by urging that the Conference consider recommending that a consultative body be formed to coordinate the activities of the various donor agencies in agribusiness and food system development. As short as all of us are on persons fully qualified to do feasibility analysis, project formulation and loan applications, we have an inordinate amount of duplication among the donor agencies. We finance parallel feasibility studies, we review the same basic numbers over and over again, and we don't seem to get together on specific guidelines for loan applications. In the process, all of us are wasting our most scarce resource, and none of us is as effective as we could be.

I am convinced that a multi-donor coordinating agency in the fields of agribusiness and total food system development would pay handsome dividends. It would provide a vehicle through which we could develop coordinated means of moving from a project-by-project approach to a genuine food system approach. It would enable us to achieve current exchange of information on new approaches, such as the global loan concept. It would give us machinery for coordinating feasibility studies and cutting out unjustified duplication. It would enable us to reconcile differences and adopt uniform and specific sets of guidelines for loan applications. It would enable us to address new problems such as how to find potential borrowers and train them in effective use of consultants. Finally, as with the Consultative Group now,

it would permit us to come to conference and distribute bankable agribusiness loans among the most appropriate financing agencies so as to maximize our combined impacts to the benefit of recipient countries in Latin America and around the world.

Group Discussion

There was basic agreement with the presentation and confirmation by others that the "global packaging of loans is coming in." Too many missing links are not being supplied via existing assistance programs. Other measures have to be taken to assure viable development efforts.

Several indicated their feelings that agribusiness development activity is probably at the take-off point. There is an increased demand for development assistance, and agribusiness planning and development is expected to receive greater attention.

Additional discussion involved the types of implementation conditions which might be desired in preparing development loan packages (see Recommendation section). A general consensus was that greater attention must be given to include essential implementation conditions in agribusiness development loan packages in order to improve the effectiveness of development assistance.

APPENDIX I

Agribusiness Planning and Development Conference
National 4-H Center
Washington, D.C.
May 30-31, 1973

LIST OF PARTICIPANTS

LIST OF PARTICIPANTS

Agribusiness Planning and Development Conference
National 4-H Center
Washington, D.C.
May 30-31, 1973

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APPENDIX II

Agribusiness Development Planning Meeting
Kansas State University
August 17-18, 1972

SUMMARY
(No. 1)

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FOOD AND FEED GRAIN INSTITUTE
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Agribusiness Development Planning Meeting [1/]
Kansas State University
August 17-18, 1972
(AID/TAB)

Summary Notes of Meeting

These notes are a brief summary of the first in a series of three planned conferences (sponsored by the Technical Assistance Bureau, Agency for International Development) relating to agribusiness development in the developing countries. The purpose of the planning conferences is to review and reassess policies, programs and activities affecting agribusiness developments.

The planned structure of each of the three conferences is outlined below. Each conference is designed to build-on the preceding ones. The final conference is expected to provide specific sets of suggestions, resolutions and recommendations for improving agribusiness development activities.

Three planning sessions were included in the first conference. The highlights of these sessions are summarized below.

Planning Session No. 1

I. David Gaumer, AID/TA/AGR. Introduction: Why We Are Here! Why Agribusiness in Development?

Fostering and stimulating agribusiness development and growth is a stated goal of AID. Both successes and failures can be sighted based on past experience. How can this experience now be used to better direct future efforts?

The purpose of the planning meeting was to review where we have been in terms of agribusiness development and to reassess where we want to go.

A series of three meetings was proposed as a means of formulating specific suggestions and recommendations concerning future agribusiness development efforts:

(1) Planning Meeting - Selected AID contractors representing various viewpoints and AID/Washington personnel.

[1/] A list of participants for the first conference is attached.

(2) Mini-Conference - Spectrum of AID contractors, general AID representatives and selected others.

(3) Final Conference - Contractors, AID, broad range of agribusiness development interests including private sector representatives.

The process of review and reassessment of agribusiness development objectives and procedures was to begin with 'internal' critique and evaluation. Strengths and limitations as viewed by AID and it's contractors was to be a take-off point for the three-phase planning effort.

Planning Session No. 1 (Thursday evening, August 17, 1972) involved presentations by AID personnel as briefly summarized below. These presentations incorporated problem areas of concern to AID and suggested possible new approaches in future efforts. A general discussion followed the presentations. This session served to set-the-stage for subsequent planning sessions of the initial 2-day planning meeting.

II. Melvin Bandle, AID, TA/N. A Consumer Approach to Development

In brief, this presentation emphasized an imbalance in the agribusiness development equation involving production, processing, and marketing. Too little attention has been given to processing and marketing functions relative to production.

Processing and marketing systems in developing countries deserve 'equal time' if agribusiness developments are to have desired impacts on nutritional goals. There has been 'under concentration on after-farmgate food pathways' in prior efforts.

III. Arthur Coutu, AID/AGR. Sector Analyis: What, Where and How.

Sector analysis and planning is an approach to effectively estimate consequences of alternatives investments, policies, programs, etc. against multiple goals, over time, within and between sectors. Both micro and macro linkages of a complete sector are involved.

A balance between efficiency and equity goals (e.g. income distribution, employment impacts, etc.) is involved. No longer can it be assumed that transfer of technology and technical information will improve well-being in the developing countries.

Sophisticated approaches to infrastructure development are needed if the long-term interests of the developing countries are to be adequately served. A concern exists that well-meant advice may not be good advice without adequate understanding of infrastructures in conjunction with important micro and macro linkages which are unique within each nation.

Planning Session No. 2

IV. Dick Phillips and Sam Unger, Dept. Econ., Kansas State University. Visualizing the Total Grains-Pulses-Oilseed Sector for Economic Development.

A need for more broadly-viewed and more systematic approaches to economic development of agriculture and agribusiness appears evident from the experiences of U.S. AID as well as other international development agencies. The purpose of this presentation was primarily to focus on key functions and key activities implicitly involved in a thorough and systematic analysis of an agriculture sector.

To visualize the implicit functions of an agriculture sector, a chain of seven direct in-line functions were illustrated: (1) Input development and production, (2) Supplying inputs, (3) Farm production, (4) Grain marketing, (5) Grain processing, (6) Product marketing, and (7) Utilization for consumption. Each link in this production-distribution chain is vital to successful sector development.

Each functional-link was further delineated (again visualized as a chain of links) in terms of key activities to be considered in development programs. These nineteen key activities (applicable to each functional link above) were classified into four types: (1) Research and Development, (2) Mobilization, (3) Implementation, and (4) Operation.

Often times it is believed that development programs of U.S. AID and other agencies have fallen short-of-target because only a partial set of either key functions or key activities have been stressed without assurances that the remaining items are completed adequately.

A contention in the paper is that analytical concepts and procedures are not the main weakness of development programs which have failed in the past. Rather, it is proposed that more attention needs to be given to each and all of the key elements of a given sector of development. Planning and development efforts should be regularly monitored in relation to the total system of concern.

A problem in approaching agribusiness developments on a piecemeal or critical-gap basis is the high probability of encountering subsequent gaps which are ultimately as important as the first. A 'holistic' or systems analysis approach is needed.

V. William Hoover, AID Contractor, Kansas State University.
A Contractor's Response to Technical Assistance in Relation to the Systems Approach

A brief review of a K-State /AID Nutrition Contract was presented in terms of: (1) Completion of contract objectives, and (2) contribution of the contract results in a Systems Analysis setting.

In terms of contract objectives, the K-State contract results would be considered successful and above original expectations. However, the contract was essentially a 'Research and Development' Contract. No specific role was intended in terms of 'Mobilization,' 'Implementation' or 'Operation' activities.

The contract reviewed is in its final stage of completion and reporting. Suggestions could be and were made regarding the latter three types of activity. Beyond the point of suggestion, no direct participation in implementation was involved in the contract. This situation is probably typical.

Considerable attention was then given to the questions both of if and how a University should or could become involved in implementation, etc. activities.

A general concern was expressed that too little has usually been done by U.S. agencies or contractors to assure the effectiveness of prior contributions in the developing countries. In a systems or sector analysis framework, probable shortcomings of past efforts become apparent. Work accomplished has generally been good, but additional problems severely dampen the effectiveness of specific projects.

Planning Session No. 3

VI. David Gaumer, AID/TA/AG (Chairman) Development of Participants Approach for Mini-Conference Presentation-Roundtable Discussion

With the foregoing presentations and ideas as background, the participants were asked to focus on an approach which would lead to generation of specific suggestions and recommendations for improved agribusiness development efforts by U.S. AID (and possibly other international development agencies).

This final discussion included numerous ideas, suggestions and, as expected, questions of concern. The following ideas were generated. The intent of this summary is to present basic ideas and concerns. The order has been changed somewhat to integrate common ideas.

Brief Description of Ideas and Concerns

1. Synopsis of Preceding Discussion

- Leonard Wilson suggested that five areas of concern appeared dominant:
  (1) Need for a 'Systems Approach' in planning.
  (2) Need for defining all important 'Linkages' in a given system.
  (3) Need for a more 'Consumer Oriented" approach in developmen efforts.
  (4) Need for greater emphasis toward 'Implementation' activities.
  (5) Need for a better understanding of 'Agribusiness' in relation to general economic development.

2. Levels of Effort

- Ken Korhner suggested a three- level classification of emerging and past development planning efforts:
  (1) Sector Analysis
  (2) Systems of Action (e.g. Key Functions)
  (3) Special Technical Focus

  All levels of effort are generally required. The desired mix of each may vary from country-to-country based mainly on stage-of-development, and in-country planning positions.

3. Research-Implementation Spectrum - General discussion of general need for considering a spectrum of activities needed to produce implementation results.

R&D activities have often failed to produce in-country results. What is AID's role? Is AID only an advisory agency? Should more effort be placed on implementation? What are the risks and what are the expected pay-offs?

4. Communication-Organization Problems - General discussion of possible shortcomings of past efforts.
   (1) Lack of focused responsibility
   (2) Lack of effective communication and feedback in current organizational setting.
   (3) Posture of AID as a staff vs. line operation. Past charter minimizes implementation role at least as visually depicted.
   (4) Lack of effective public-private sector integration in terms of implementation goals.

5. AID/TAB Relative to Sector Analysis

General concern that AID/TAB activities should incorporate Sector Analysis results but that implementation activities, once decided upon, are operation-oriented. Hence, Sector-Analysis can help decide what should be done, but doing and implementing requires concerted efforts beyond the R&D phase.

Also, AID/TAB is but a cog-in-the-wheel involving AID/W, AID Bureaus, and other AID divisions. Coordination-communication is needed. Responsibilities need to be defined and authorized. Accountability for results is generally lacking; and also, limited resources for implementation restricts effective implementation in many cases.

6. Analysis vs. Management

- Don McCune expressed a concern that many activities, especially at the contractor level, are analytically-oriented. Specialists are involved. These same specialists may not be effective managers in terms of implementation.

Without intensive effort it will be difficult for specialists in analysis to respond to implementation problems. Therefore, the role of contractors as established in the past may not respond well to the Sector Analysis framework.

This does not negate the need for a systems approach; rather, the need for re-alignment of responsibilities and commensurate organization changes are called-for.

7. Responsibility-Accountability

Bill Hoover emphasized a concern for definitive statements of responsibility-authority-capacity to respond-and accountability. Successes of the past can be traced in terms of the above; likewise failures may also be appraised similarly. A renewed focus on both responsibility and associated ultimate accountability is needed.

In this regard some serious questions can be raised as to the current organizational framework in which AID and its contractors now operate. Further, needed changes, if agreed upon, will involve numerous changes in structures and procedures both internal and external to AID. Such changes are not always immediately obvious. A 'systems analysis' approach is needed in this area as well as in country studies.

8. Sector Analysis in Perspective

- Art Coutu emphasized the need for Sector Analysis as a means for placing agribusiness developments in perspective. This type of planning effort has typically been lacking with the sacrifice of equity goals (in general) relative to efficiency goals. Over the long-term, even the efficiency goals have therefore often failed because the issues and goals are interrelated in the final analysis.

  Sector Analysis is but one-level of needed emphasis as discussed above. However, it is an important and oftentimes dominant concern in that implementation programs which fail to be integrated with general development plans may lead to undesired results. We need to be able to predict, in most cases, possible outcomes of development programs prior to their adoption if our advice is to eventually prove to be sound.

9. Goals for the Mini-Conference

- The general consensus of the participants was that a need existed for a sharper focus at the Mini-Conference if fruitful results were to eventually be generated. The function and theme of the final conference must be clearly stated.

  Suggestions included the need for a more definitive stance by AID/W concerning types of results desired, i.e., types of conference results which would receive consideration.

  Generally it was believed that the final conference could result in a series of specific suggestions and recommendation to AID. These suggestions might take the form of resolutions which would be adopted by the final conference participants.

9. Goals for the Mini-Conference (cont.)

- The format of the Mini-conference could be patterned in a way similar to that which would eventually be followed at the final conference.

  To sharpen the focus of future conferences, the results of this first conference need to be summarized and circulated for discussion. Each of the origina participants agreed to serve as evaluators and offer further suggestions. Further thinking about the purposes of the final conference and the types of results which could be generated was desired.

This brief summary of the first Agribusiness Development Planning Meeting is intended as a synopsis of the meeting. Many additional points were included. However, this summary will hopefully serve as a point of departure in planning future courses of action.

Agribusiness Planning Mweting
August 18, 1972
List of Participants

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Mr. Michael Galli
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Mr. David D. Gaumer
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Mr. Melvin Bandle
Private Industry Officer, TA/N

Mr. Ken Korhner
Office of Development Adm. (PERT, etc.)

From Kansas State University:

Dr. Richard Phillips
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Dr. Sam Unger
Department of Economics
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Dr. William Hoover, Department Head
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From T.V.A.:

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From Mississippi State University:

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From Harvard Business School:

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APPENDIX III

Agribusiness Development Miniconference
New Executive Office Building
Washington, D.C.
April 5-6, 1973

SUMMARY
(No. 2)

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AGRIBUSINESS DEVELOPMENT MINICONFERENCE

AID/TAB
New Executive Office Bldg.
Washington, D. C.
April 5-6, 1973

Summary of the Conference

These notes are a brief summary of the second in a series of three planned conferences, sponsored by the Technical Assistance Bureau, Agency for International Development, to explore improved means for fostering 'agribusiness development' in the developing countries. Participants of this conference were principally AID personnel who have first-hand knowledge and experience with past and on-going development efforts.

Contents

Purpose
Procedures of Conference
Background
I. Goals for Development
II. Key Activities for Development
III. Identification of Key Interrelationships Among Activities
IV. Identification of Key Constraints and Stimuli for Development
V. Potentials and Limitations of Bilateral Assistance Programs
VI. Potential Improvements in Development Activities and Applied Research Programs

Purpose

The primary aim of the conference was to identify potential improvements in AID development activities involving agribusiness in the developing countries. Specific attention was also to be given to possible applied research programs which would foster agribusiness development.

Procedures of Conference

To achieve the primary purpose of the conference, a structured series of seven worksheets was utilized--leading in a step-by-step fashion to final identification of potential improvements in development activities. A brainstorming technique was used to generate basic ideas and relevant factors for consideration at each intervening step in the process.

For the purpose of limiting and focusing discussion, attention was centered on the grain, pulses and oilseed sector of agriculture. Further, primary attention was given to the marketing and processing functions.

Background

As background and introduction for the series of worksheets to be developed, Richard Phillips, Kansas State University, presented a summary of the prior "Agribusiness Development Planning Meeting" held August 17-18, 1972 at Kansas State University. (See summary notes of the first meeting. [1/]

The core material reviewed dealt with the production-distribution chain for the grain, pulses and oilseed sector of agriculture. The commodity system approach based on a chain of key activities was introduced. Particular attention was given to the various types of links, i.e., research and development, mobilization, implementation, and operation, which are all essential toward building a viable commodity system.

[1/] The summary of this meeting is included in Appendix II.

I. Goals for Development (Grains, Pulses and Oilseeds Sector)

The first worksheet involved the participants rating of intermediate goals which they felt needed most emphasis for each of five stages in the production-distribution process. A brief summary of these ratings is as follows:

Stage of Process	Most Important Intermediate Goals
Supplying Farm Inputs	Increased production
	Lower unit costs
	Improved farm inputs
Farm Production	Lower unit costs
	Higher labor productivity
Grain Marketing	Assured product markets
	Reduced marketing costs
	Reduced marketing losses
	Improved price stability
	Improved distribution
	Fair price differentials
	Assured supplies all year
Processing	Reduced marketing losses
	Improved distribution
	Higher nutritional quality
	Improved palatibility
	Greater product uniformity
	Assured supplies all year
	Reduced preparation effort
Product Marketing	Assured product markets
	Improved distribution

From the above ratings of goals requiring the greatest emphasis in the developing countries, it is suggested that all commodity production-distribution functions need some attention. Further, however, the participants were relatively more concerned about the grain marketing and processing functions as indicated by the predominance of goals emphasized for these functions.

A general discussion of goal development problems and issues followed the above rating procedure. A consolidated summary of the main concerns of the participants is as follows:

1. Before goals are adopted, attention must be given to how goals can be achieved in given country situations. Hence, there was a concern for the meaning of goals as described which are abstract as defined.

2. Goals in developing countries are not generally stated in the manner described. Rather, the four main stated goals are: (1) Increase employment (more jobs), (2) Generate foreign exchange, (3) Achieve higher disposable incomes, and (4) Produce more food.

3. Another related concern was the manner in which ag development programs are often structured. That is, four parts are commonly considered: (1) Economic, (2) Technical, (3) Managerial, and (4) Behavioral. The intermediate goals described are not tailored to this framework.

4. A distinction was made between external vs. internal criteria or goals. External criteria are often more superficial and do not require sophisticated procedures for evaluation. In contrast, internal criteria often include variable factors, income and employment goals, alternatives for development and efficiency criteria. Consequently, internal criteria are generally harder to evaluate.

5. The above points resulted in questions of concern such as:

   - Are there conflicts in AID goals relative to the developing country goals?
   - How can goals of AID be reconciled with host country goals?
   - Can a systems analysis approach be used to reconcile conflicting goals?
   - Can goals of the recipient country (such as a goal to develop employment) be less than optimally efficient by U.S. standards, but nonetheless be better for the country involved? If so, then perhaps AID can concentrate on wrong goals by using U.S. standards.

II. Key Activities for Development

The second worksheet involved a discussion and analysis of major problem areas in grain marketing and processing. Specific operations such as assembly, transportation, conditioning and storage, wholesale distribution and processing were discussed. Major problem areas needing development emphasis were identified as follows:

Marketing or Processing Operation	Key Activities for Development
Assembly	Measuring need and market potential Developing needed facilities Improving marketing programs Effective product merchandising
Transportation	Measuring need and market potential Developing effective organization Developing needed facilities
Conditioning and Storage	Developing needed facilities Improving product combination Improving marketing programs Effective product merchandising
Wholesale Distribution	Developing needed facilities Improving marketing programs
Processing	Projecting supplies of needed inputs Mobilizing resources (especially management) Improving product combinations (including new products) Establishing more favorable environment

Discussion surrounding the rating of major problem areas in grain marketing and processing was centered on the following topics which span or cross-over many of the key activities cited:

1. Product standardization. A prerequisite for the development of a viable processing industry is the availability of a uniform product. Uniform grades and standards are needed.

2. Product preservation. A key to development is improved preservation of products, especially moisture control. Product preservation would facilitate year-around operation of processing plants. Dryer technology and storage facility developments are needed.

3. Small-scale adaptation of technology. To effectively meet localized needs for modern processes, technology must be adapted for small scale operations. Drying, treating and storage units of a small scale are needed. Associated loan support activities of AID and other agencies must also be adapted for smaller operations.

4. Area development planning. AID and others must ask what happens in the aggregate following development activities. A change from project to area development planning is called for.

III. Identification of Key Interrelationships Among Activities

The next planned step was to determine general factors and interrelationships among the nineteen (or more) specific activities that are associated with both the marketing and processing functions. These activities were also prearranged into four groups: Research and Development, Mobilization, Implementation and Operation activities.

A concensus opinion was that the specific activities could not be meaningfully further aggregated or interrelated without a specific country setting and knowledge of local or area conditions. A variety of definitional changes in activities were suggested to clarify concepts, but no further efforts were deemed necessary.

One activity, Item 10-Establishing a Favorable Environment, was discussed in particular. Development activities should be pursued in light of or in conjunction with needed : (1) marketing services (grading, market statistics, etc.), (2) product and industry regulations, (3) infrastructure development, (4) socio-political-economic climate, (5) fostering of the consumers' conception of the industry and its products.

IV. Identification of Key Constraints and Stimuli for Development

The next worksheets were structured to produce extensive listings of both limiting factors and stimuli for development. Forty-seven limiting factors but only sixteen stimuli were indicated by the participants. These listings are summarized in Tables 1 and 2 (attached).

Ten categories of limiting factors were derived from the general listing constraints. These categories were: (1) Management, (2) Labor, (3) Land, (4) Capital, (5) Raw Material Inputs, (6) Product Handling/Distribution, (7) Processing, (8) Merchandising/Markets, (9) Governmental/Regulatory, and (10) Other. A broad spectrum of factors, as indicated, was involved. This listing helps provide a perspective to development problems in the developing countries, but all agreed that limiting factors are a product of the unique conditions involved.

Table 1. Limiting Factors for Development

Management
- Management
- Lack of knowledge and skills
- Lack of motivation
- Family enterprise
- Lack of planning
- Lack of information and data
- Lack of sufficient depreciation for replacement
- Inability to take risk
- Improper planting - overplanting

Labor
- Low work output

Land
- Small lot production

Capital
- Working capital
- Low purchasing power
- Lack of investor capital
- Capital market

Raw Material Inputs
- Uncertain and variable raw material supplies
- Limited combinations
- Lack of properly packaged technology
- Limited resources - immediate and long term

Processing
- Lack of value added processing

Merchandising/Markets
- Limited size of markets
- Failure to realize existence of other markets
- Corruption
- Unfavorable industrial climate
- Speculation
- Oligopolistic structure
- Middlemen
- Lack of value added exports
- Lack of common markets
- Monopoly

Governmental/Regulatory
- Government intervention
- Price controls
- Lack of policy - (and planning)
- Bureaucracy
- Too much aid (PL480)
- Protective tariffs
- Tax laws
- Multiple goals

Other
- Weather
- Lack of consumption
- Population boom

Table 2. Stimuli for Development

Management
- Training
- More available marketing information
- 'Recognition'
- Conditions for all season growing

Labor
- Low price labor/supply

Land
- Cheap land

Capital
- Subsidized capital

Raw Material Inputs
- Cheaper costs-power/fuel/energy
- Irrigation

Product Handling/Distribution
- Roads

Processing

Merchandising/Markets
- Competition in wholesale markets
- Rapidly growing markets
- Urbanization

Government/Regulation
- Central planning
- Incentive laws
- Remove U.S. import restrictions

Other

A discussion of impacts of limiting factors and means of overcoming the limiting factors was planned. Similarly, the impacts of stimuli and ways to use stimuli were to be discussed. Limited time prevented a full discussion as planned; however, the following summary observations were made:

1. AID needs to develop a procedure or approach for systematic evaluation, diagnosis and specification of techniques to overcome limiting factors. A systematic analysis of factors is needed for success.

2. Training and education of operational management personnel is needed.

3. Development processes involve an ability to innovate or change. Often there is inability for change in LDC's even when problem or needed changes are known.

4. Different problems (and different associated management needs) are involved with domestic vs. export production-distribution functions. Export development requires greater management skills and only the larger or more developed firms are providing for management training.

5. The types of enterprise structures, e.g., family vs. corporate, affects the basis for change and development. Inducement of changes in family enterprise systems may require incentive programs, including capital development programs.

6. Rapidly changing demand, supply and environmental conditions creates a dynamic setting which is in itself a source of problems--problems in keeping pace.

7. AID has provided technical inputs for development but lacks full knowledge of what other factors are needed or how to supply them. An analytic methodology is needed to determine what short-comings are present.

V. Potentials and Limitations of Bilateral Assistance Programs

The participants considered next the potentials and limitations of selected types of bilateral assistance programs, e.g., capital development and program loans, direct hire technical assistance, and TDY consultant technical assistance. The aim was to evaluate and recommend improved means of providing technical assistance.

Capital development and program loans. For this type of assistance the following lists of both potentials and limitations were discussed:

Potentials	Limitations
1. "Systems of action" can and should be planned	1. Past efforts favor government enterprise
2. Subsidized capital may be desirable in some cases	2. Loans may be too limited or restrictive
3. Provide for reloan of funds to the private sector	3. Minimum sizes of loans have been too high in past
4. Provide for reduced risk, i.e., spreading of risk	4. Emphasis has been on engineering development without adequate suppor capacity and capability
5. Carefully condition the loans	5. Social and cultural factors must be considered
6. Require feasibility studies prior to providing loans	6. Political factors may limit programs
7. Provide and integrate technical assistance with loans	7. External criteria tend to be too standardized and not adaptable to local conditions

Further discussion included a general concern for better understanding of what all really needs to be done in the developing countries -- both conceptually and in terms of the people and resources needed to do the job. Subsector studies for broad areas are needed. Social-cultural-political factors must be considered. Attempted application of only external criteria will not provide good results.

Direct hire (and TDY Consultant) technical assistance. The full potential for individual specialists cannot be realized if the specialist is separated from ongoing programs. Long term commitments with continuing advisory positions are needed to effectively transfer technology, train, educate and apply technical skills. "Packages" of adapted technology, technical inputs and technical assistance are needed in a sector analysis setting with scheduled planning and implementation.

In the developing countries the criteria for effectiveness are not readily set forth. There are usually no definitive statements of specific problems, specific parameters and specific times for accomplishing goals.

For these reasons, there is probably no simple and dramatic scheme for rapidly changing development conditions in these countries with short-term technical assistance.

VI. Potential Improvements in Development Activities and Applied Research Programs

The final structured step of the miniconference was conduct of a session to establish potential ways of improving existing development activities and programs (including applied research). To initiate the discussion, a question was asked: "How do you solve food shortage problems?" A synopsis of the recommended development actions involves three main areas of concern:

1. Establish a commodity systems approach appropriate to the local setting.

2. Develop an area orientation within a national policy framework.

3. Place emphasis on increasing value added through preservation and processing.

These principal development actions were discussed further and the following concluding thoughts were presented:

(a) Seek to merge external criteria for development with ongoing internal criteria. This requires a long run planning horizon.

(b) Prior development efforts have focused primarily on production oriented results which have failed to solve the food shortage problem. Other factors in the production-distribution process must not be overlooked. A broad potential area for future development involves "preservation" of food products.

(c) Implementation efforts need to more carefully deal with in-country conditions and restrictions, focus on the nature of the areas being dealt with, and provide for an implementation agency in the area(s) of concern.

Following a brief informal discussion of plans for the final conference, the miniconference was adjourned.