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9. ABSTRACT
The marketing system is a primary mechanism for coordinating production, distribution and consumption activities. It includes the exchange activities associated with the transfer of property rights to commodities, the physical handling of products and the institutional arrangements for facilitating these activities. This report has a systems orientation emphasizing interdependence of related activities and concern with the coordination of economic activities as a system. Thus, production and distribution of farm inputs, farm production and food distribution, and production and distribution of consumer goods are viewed as a system because they are interdependent. The three areas of primary concern, northeast Brazil, Bolivia, and Colombia, are each characterized by low average per capita income, highly skewed income distribution, and a high population growth rate. Major aspects of the social and economic environment and their relationship to the food production distribution system are reviewed together with a comparative analysis of urban food distribution and of market coordination problems in major agricultural commodity sub-systems. Diagnostic research results are compared across several countries, as are recommendations for action. Comprehensive marketing reform programs can only be achieved over a long period of time. The type of program in this discussion should operate with a 5-10 year planning horizon with high priority given to training technicians for both public and private sector positions in agricultural marketing. The approach recommended focuses on such issues as communication systems, grading standards and channel relationships, rather than on central markets or grain storage facilities.

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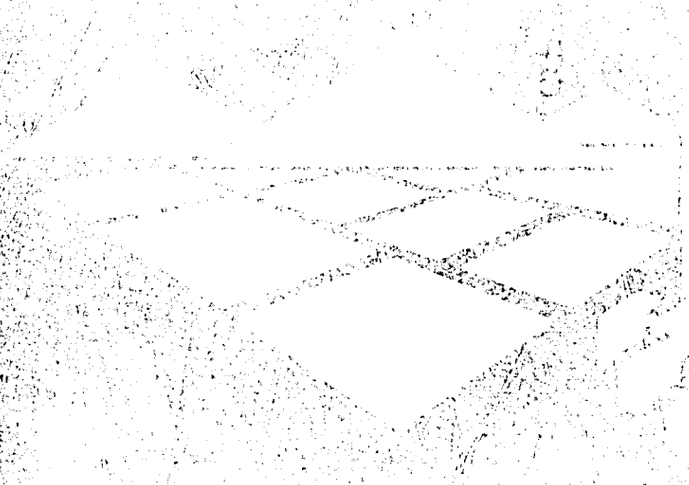
LATIN AMERICAN STUDIES CENTER Michigan State University

Kelly Harrison, Donald Henley, Harold Riley, James Shaffer



MARKETING IN DEVELOPING COMMUNITIES SERIES

RESEARCH REPORT NO. 6
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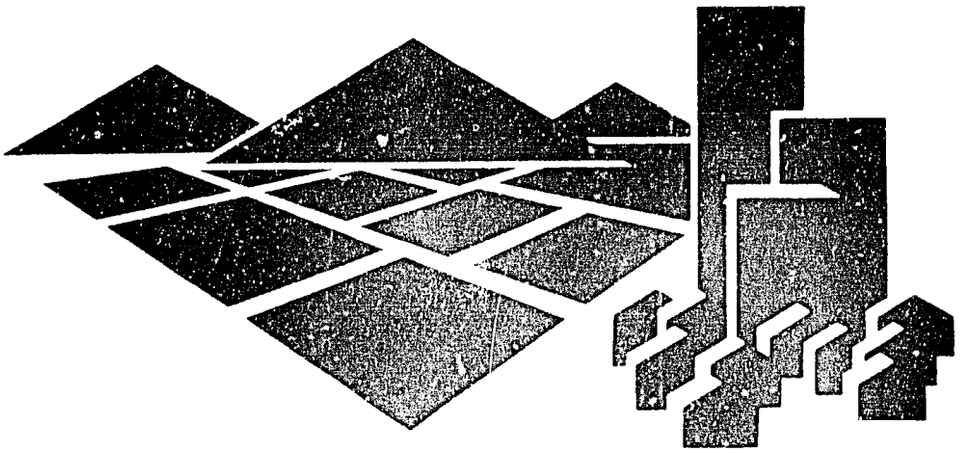
IMPROVING FOOD MARKETING SYSTEMS IN DEVELOPING COUNTRIES: EXPERIENCES FROM LATIN AMERICA

Kelly Harrison, Donald Henley, Harold Riley, James Shaffer



MARKETING IN DEVELOPING COMMUNITIES SERIES

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PREFACE

This publication is primarily directed toward development specialists faced with the practical and difficult problems of identifying opportunities for improving existing agricultural production-distribution systems in developing countries, designing general strategies and coordinating sets of specific programs and projects consistent with national development goals. The report is action oriented, but we stress the importance of careful diagnostic assessments as an integral part of a longer-term planning and program implementation effort. We hope this publication and related reports will also be useful references for those involved in training marketing specialists and other professional development personnel.

The report draws largely on our experience in Latin American countries. Over the past 10 years, we have been engaged in a series of diagnostic studies and related advisory activities, first in Puerto Rico and later in Northeast Brazil, Bolivia, Colombia and Costa Rica. This work has been financed by the United States Agency for International Development (USAID) and by local government agencies. In each country, the projects have been carried out in close collaboration with local professional personnel. Indeed, one of the important outputs of these projects has been the further development of the competence of all the professionals, locals as well as the "extranjeros" involved in the projects.

First we present a series of chapters in which we describe and summarize major diagnostic observations that have emerged from the various projects. This is done in the context of an analytical approach that we have developed in the course of our work. In the

last two chapters, we describe a general framework for a systematic approach to marketing reform and offer some suggestions on how to develop and implement comprehensive marketing improvement programs.

We are deeply indebted to the many people who have helped to make this publication possible. First, we acknowledge Dr. Charles C. Slater, now at the University of Colorado, who was one of the principal leaders of the work carried out in Puerto Rico, Brazil and Bolivia. Mr. Martin Stoller, former marketing advisor in the Latin Bureau of the Agency for International Development, gave much help with the early marketing projects.

The contributions of our co-workers in each of the countries are gratefully acknowledged, along with those of local project leaders, Jose Santiago and Idalia Rodriguez in Puerto Rico, Ferdinando Neves in Northeast Brazil, Nelson Suarez in Colombia, Alfredo Mercado in Bolivia, and Rufino Gil in Costa Rica. Each had an active role in planning and carrying out diagnostic studies and helping formulate proposals for marketing reforms.

We are especially grateful to German Feged and the Board of Directors of CORABASTOS (Corporation de Abastecimientos de Bogota) for their willingness to try out some of our early recommendations and permitting us to "look over their shoulders" to learn more about practical aspects of market system development.

Finally, since these projects have been team efforts involving faculty and graduate students from three departments at Michigan State University, we acknowledge the direct intellectual contributions of our colleagues, Vincent Farace of the Department of Communications, Donald Taylor of the Department of Marketing, Herman Koenig of the Department of Electrical Engineering and Systems Science, Donald Larson, now of the Department of Agricultural Economics at Ohio

State University, and John R. Wish, now of the College of Business, University of Oregon. We also recognize the significant contributions of former graduate students, Thomas Webb, Robert Nason, John Griggs, Alan Bogotay, Mark Doctoroff, Colin Guthrie, William Baucom, Michael Moran, David Lindley, Michael Weber, David Peacock, Pablo Torrealba and Noberto Frigerio.

November 1974

Kelly Harrison
Donald Henley
Harold Riley
James Shaffer

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CHAPTER 1

INTRODUCTION

In 1965, Michigan State University was awarded a research contract by the United States Agency for International Development (AID/tcr-786). The purpose of the contract was to fund research on the role of marketing in economic development. It provided for a review of the literature, preparation of a methodological approach, evaluation of the historical impact of marketing development programs on development in Puerto Rico and the completion of a diagnostic study in one Latin American country, later specified to be in Northeast Brazil.

In 1966, the Latin American Bureau of USAID awarded a second contract (la-364) to Michigan State University, which made it possible to expand the scope of the Northeast Brazil project and to initiate another project in Bolivia. The contract called for the establishment of the Latin American Market Planning Center (LAMP) at Michigan State University and required increased emphasis on diagnostic studies and the formulation of marketing reform programs. Later, in 1968, this contract was extended to support a new project in Colombia. This provided an opportunity to draw on our experience in Puerto Rico, Brazil and Bolivia and with additional support from Colombian agencies to undertake a comprehensive diagnostic study and a related effort aimed at setting in motion a process of market system reform.

In 1970, the project recommendations were tested out as a public corporation, CORABASTOS, was created and began to carry out a broad food marketing improvement program for Bogota, Colombia, and its surrounding agricultural supply area. Then, beginning in 1972, a USAID mission contract in Costa Rica afforded a second opportunity to utilize and further develop our approach to market reform.

The Role of Marketing in Development

In general, the economic development process involves the transformation of rural, agriculturally based economies into more urban, industrially based economies. Increased labor specialization, adoption of more scientific technologies, and the geographic separation of production and consumption require the development of a more complex marketing system. As agricultural producers become more specialized and commercially oriented, they become increasingly dependent on purchased food, industrially produced farm inputs, and consumer goods that flow from the larger cities to rural trading centers.

As people migrate from rural areas to the cities and these urban centers increase in size, more and more of the urban consumer's food expenditures must go for marketing services, including transportation, storage, processing, packaging, and product grading. As incomes increase, more marketing services are demanded. Thus, as economic development occurs, the proportion of consumer expenditures for marketing services tends to increase and the marketing system becomes more important as a coordinator of production and consumption activities.

It is our observation that economic planners have focused heavily on investments in projects designed to increase industrial and agricultural production capabilities. Most aspects of marketing, other than investments in basic transportation infrastructure, have usually been relegated to a secondary and adaptive role in the development process. Relatively little attention has been directed toward credit, technical assistance and training to improve marketing systems, especially private sector operations.

The long-held belief that effective marketing systems will evolve automatically is at best dubious. Since it is widely recognized that farmers and industrialists must be educated, motivated, assisted and sometimes subsidized to encourage the necessary innovation to promote development,

there is no apparent reason to expect market intermediaries (or more accurately, marketing system firms) to be any different. In fact, our evidence suggests that at some stage public agency efforts to stimulate the development of effective internal markets may become crucial to development.

Many development strategists are not yet convinced that the above arguments are valid. There appears to be a great deal of faith in the invisible hand as a regulator of markets and marketing systems. Yet, one hears much talk of speculative middlemen, monopolists and outrageous marketing margins. Usually such market abnormalities are accepted with resignation and bitter complaints. Occasionally, steps are taken to legislate fair margins and stable prices. And sometimes government actions are taken to intervene in the buying and selling of key products. Assemblers, wholesalers and sometimes retailers have been treated as enemies of society rather than as allies. They are tolerated as a necessary evil that must be carefully policed. This has produced little improvement in marketing practices or system performance.

There has been little recognition of the possibility of treating marketing intermediary (or distribution) firms as farm and industrial firms are treated--as providers of socially useful services for whom positive policies should be developed to encourage and induce improved social performance and productivity. We believe balanced development planning requires positive and realistic treatment of the commercial sector. Public attitudes must be changed. The adversary relationship between distribution firms and society results in unwarranted dissipation of public resources, distrust and uncertainty, and disrupts the harmony and unity of purpose required for national development.

A System Orientation

In our work in Latin America, and to a lesser extent in the U.S., we have found that the term "marketing" can be

interpreted in various ways. At one extreme, there is a tendency to equate marketing to all the imagined shortcomings of traditional middlemen. At the other extreme, some people see market system reform as simply providing marketing improvements in the form of appropriate infusion of supermarkets in urban areas or storage and processing facilities in rural areas.

For our purposes we have found it convenient to regard the "marketing system" as a primary mechanism for coordinating production, distribution and consumption activities. When viewed in this manner, marketing would include the exchange activities associated with the transfer of property rights to commodities, the physical handling of products and the institutional arrangements for facilitating these activities. Many of the important business decisions by managers of farms and industrial firms involve production planning in relation to market opportunities. Hence, marketing can be considered as part of the set of activities coordinating various stages in a production-distribution channel, such as the food system or a commodity subsystem. In this context, it is useless to try to establish an arbitrary definitional division between "production" and "marketing." For this reason, we do not subscribe to definitions of agricultural marketing that are limited to the activities that occur after the products pass through the "farm gate."

In our diagnostic studies, we have been concerned both with the micro (firm level) behavior of participants in agricultural production-distribution systems and the more macro consequences that occur over time and affect the well-being of various participant groups, such as consumers, retailers, wholesalers, processors, assemblers and farmers. It is in this context that we argue that the performance[1]

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[1]The word "performance" is used here to represent a combination of economic consequences. It refers to economic efficiency in the use of resources in marketing activities, effectiveness in market coordination to promote price stability, fulfillment of consumer quality preferences, and

of agricultural marketing systems can be improved through a variety of governmental activities.

We do not suggest that the performance of agricultural marketing systems is more important than the performance of many other aspects of the economic system. In fact, it is our belief that a substantial complementarity exists within the economy--poor performance in one subsystem of the economy limits the potential performance of another. Thus, the interrelationship among subsystems of the economy becomes very important, and meaningful analysis for planning is not easily bounded. Recognizing this, we adopted what might be called a "systems orientation."

The "systems orientation" emphasizes interdependence of related activities and is concerned with the coordination of economic activities as a system. Thus, production and distribution of farm inputs, farm production and food distribution, and production and distribution of consumer goods are viewed as a system because they are interdependent. Small increases in productivity in one part of the system may greatly improve the potential for the whole system. Similarly, failure at any functional level may cause stagnation in the entire system.

Any particular function or activity may be perceived as unprofitable for an individual or firm to undertake, given the constraints of the system, yet the function or activity may contribute significantly to the development and productivity of the system as a whole. That is, there may be very significant external benefits in terms of development to particular activities. For example, the efficiency of a marketing system depends on information flows. It is not unusual, however, for different market participants to have varying access to critical supply or demand information. The development of appropriate information systems may be beyond the technical or financial capabilities of any

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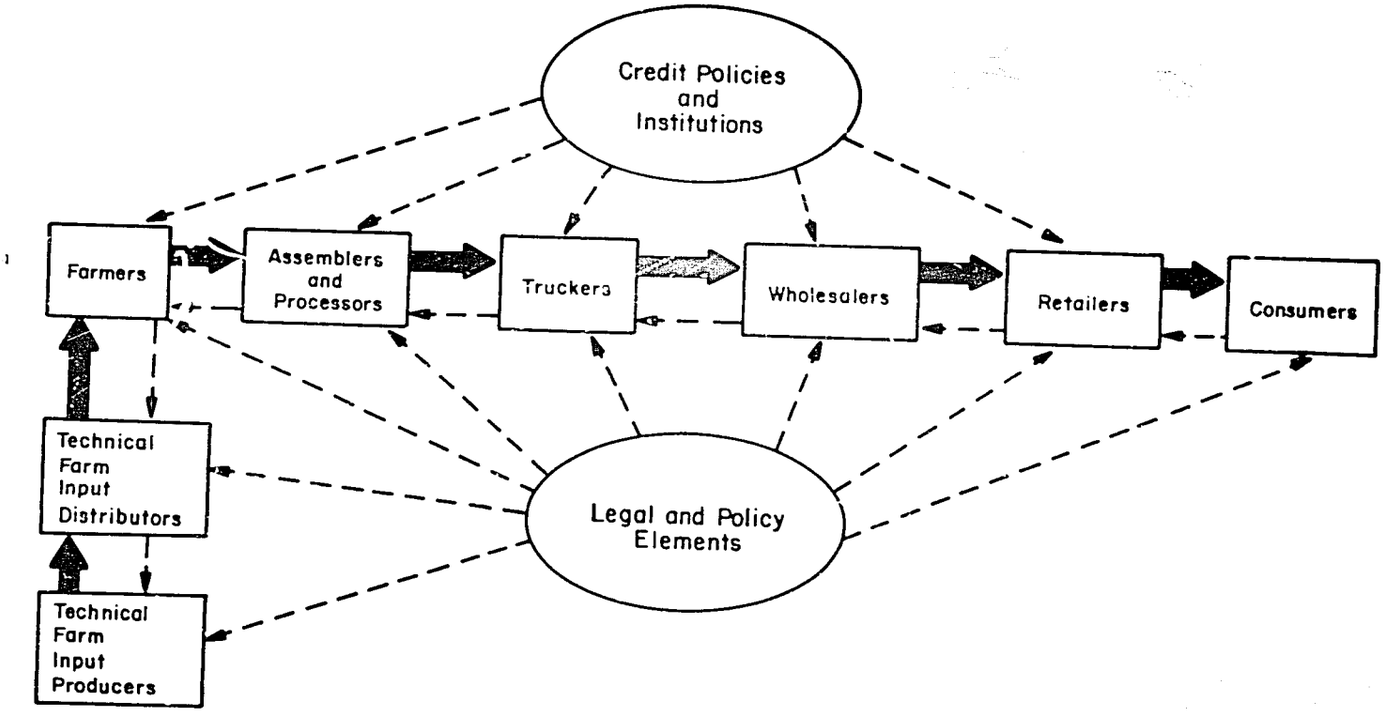
competitive flexibility and willingness of market participants to innovate and progress.

individual market participant, or may be only marginally profitable (or even unprofitable) to the individual investor. Analysis and planning should be designed to identify and respond to situations in which the calculus of internal vs. external benefits precludes investment by private firms.

Our research has convinced us that these interdependency considerations are critical in understanding and improving the performance of the agricultural production-distribution system. For example, the development of low-cost food retailers in low-income neighborhoods is dependent on the development of effective wholesale institutions that can greatly reduce supply procurement problems, as well as supply credit and technical/managerial skills. Conversely, the development of such a wholesaler is largely dependent on the assurance that a market will exist for his services. Thus, neither the lower cost retailer nor the wholesaler institution is likely to develop in isolation. Both must move together, although either may initiate the movement toward an organized wholesale-retail chain.

It is obvious that everything cannot be taken into consideration in analysis and planning: there must be some bounds. In our studies, we defined the system first in terms of direct market participants (consumers, retailers, wholesalers, assemblers, processors, truckers and producers). We then expanded the research, depending on the country studied, to consider external elements we felt most directly affected the performance of traditional market participants. We considered credit policies and institutions, legal elements, and supply of technical farm inputs. Figure 1.1 depicts the major elements of the agricultural production-distribution system that have been included in LAMP market development projects. The heavy lines denote input or product flows, and the dotted lines depict flows of capital, services, information, and legal and government policy forces.

FIGURE 1.1 AN ILLUSTRATION OF PRINCIPAL COMPONENTS IN A DIAGNOSTIC STUDY OF AGRICULTURAL PRODUCTION-DISTRIBUTION SYSTEMS



An Approach to Market System Diagnosis and Reform

A systematic diagnosis of agricultural marketing system performance in relation to development goals is a necessary first step toward formulation of marketing improvement programs. The approach we have developed can be modified to fit local conditions, but basically includes the following:

1. An examination of the food production-distribution-consumption system in a selected market area--usually a large urban center--and its related food supply area. The same approach can be extended to include entire countries.
2. A description and analysis of the urban food distribution system and related commodity supply subsystems to identify potential opportunities for improvements.
3. Preparation of similar diagnostic studies directed toward farm input and consumer goods distribution, and selected public aspects of marketing concerned with laws and regulations, information systems and credit policies.
4. An evaluation of marketing system performance that is both normative and relative. It must be normative in the sense that market system results (outcomes) are measured against what seems to be desired based on contributions toward general development goals. The procedure must be relative in the sense that results flowing from the present system are judged against what seems realistically attainable from alternative organizational arrangements and policies.

The concept of system performance refers to the flow of consequences from a particular organization of the system. The organization includes both system structure and the rules regulating behavior of the participants. Performance is improved when an organizational change results in a more desirable flow of consequences.

Economic performance is a multi-dimensional or multi-goal concept. An emphasis on broad performance objectives recognizes that the goal of increasing per capita GNP or reducing the cost of achieving a particular goal (the economic efficiency criteria) is not enough. In general, the LAMP studies have been made within the framework of three generally complementary though occasionally conflicting development goals: (1) increased growth in per capita gross domestic product, (2) full employment of the labor force, or at least an acceptable unemployment rate, and (3) greater equality in income distribution.

Within this broad framework, a number of more specific development objectives are often set forth for the agricultural production-distribution system. The following are relevant objectives for market development work.[2]

1. To achieve an abundant nutritious and reliable food supply at economical prices. A variation of this objective is to stimulate food production and distribution to provide nutritionally adequate diets for all.
2. To promote and facilitate the production and distribution of the combination of foods and related services that best reflect consumer preference and the real relative production costs.
3. To stimulate the development and adoption of improved technologies and organizational arrangements that will lead to increased resource productivity in all aspects of food production and distribution.
4. To stimulate the creation of productive and remunerative employment opportunities.
5. To increase the level of farmer income and improve the relative income position of small farmers.

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[2]James D. Shaffer, "Designing Agricultural Marketing Systems in Developing Countries," Staff Paper #72-3, Department of Agricultural Economics, Michigan State University, February 1972, p. 31.

6. To create the conditions necessary to ensure the development of equitable and competitive exchange relationships in agricultural markets.
7. To discourage uneconomic uses and spoilation of natural resources and the environment.
8. To encourage socially desirable population settlement patterns. Settlement patterns are of major concern in many Latin American countries because of the near indigestible growth rate of major cities.
9. To foster a sense of belonging and participation among food system participants.

It is extremely difficult to attempt a comprehensive empirical evaluation of existing and alternative marketing systems in relation to the numerous development objectives. However, it is desirable to identify opportunities for improvements that promise to significantly contribute to those development objectives. Where conflicts or trade-offs are involved, decision makers should be presented with a careful evaluation for consideration in arriving at subjective judgments on the best solution.

Objectives and Outline of the Report

Our objectives in preparing this report were threefold. First, we wanted to pull together our experience through a comparative analysis of marketing problems in several different Latin American countries. Second, we wanted to more completely formulate and present an approach to marketing system diagnosis and planning. Finally, by accomplishing the first two objectives and presenting the LAMP approach in a development planning context, we hoped to call new attention to the important role of an effectively coordinated marketing system as a stimulus to broadly defined economic development.

In Chapter Two, we will review some major aspects of the social and economic environment and their relationship to the food production-distribution system. Chapter Three

focuses on a comparative analysis of urban food distribution. Chapter Four presents a comparative analysis of market coordination problems in major agricultural commodity subsystems. In Chapters Three and Four, diagnostic research results are compared across several countries, as are recommendations for action.

Chapter Five presents a framework and suggestions for improving performance in agricultural production and distribution activities, using a systems approach and emphasizing improved coordination. Chapter Six offers some suggestions on how to get an agricultural marketing development program started. We have tried to pragmatically describe how a developing country or some individual agency in a developing country might utilize our action-oriented approach to marketing system evaluation and reform.

CHAPTER 2

GENERAL SETTING

We have found substantial environmental and market system similarities among market areas in which LAMP Center research has been conducted. In the three areas with which we are primarily concerned in this report (Northeast Brazil, Bolivia and Colombia), the general socioeconomic environment within which marketing activity takes place was characterized by low average per capita income, together with highly skewed income distribution. Population growth rates were relatively high, especially in the major urban areas. As agriculture has become more industrialized, migration of population to urban areas has resulted in high unemployment rates and serious underemployment.

In all of the urban areas surveyed, we found a high percentage of consumer income devoted to food expenditures. Strikingly similar consumer food purchasing patterns were evident with respect to both market basket mix and type of outlet patronage. Food wholesaler and retailer characteristics show far more similarities than differences between countries. And in all three marketing areas, there are significant negative attitudes, both public and private, toward market intermediaries. As a result of the latter, there is insufficient awareness of the myriad of marketing tasks required to transform raw products at the farm to final consumer products made available in appropriate retail outlets.

There are substantial opportunities for meaningful market system reform, given the general deficiencies of food production-distribution systems. Reform is urgent in major urban areas in Latin America, considering the relationship between food availability and prices on the one hand and standards of living and political stability on the other.

The commonality of market forces and conditions in the areas studied strongly suggests our findings can be applied in other areas. While local conditions--social, economic and

political--will dictate differing programs and policies, we believe the material presented here and in subsequent chapters has wide application in Latin America. For example, the CORABASTOS program in Bogota, Colombia, and the PIMA program in Costa Rica have both been built on the methodology and policy recommendations developed by LAMP.

The Food Sheds Studied

In each of the countries, our study focused on a major urban area and its accompanying food shed. Food consumption patterns in the urban center were analyzed relative to the urban and rural production-distribution supply systems.

The urban centers studied are of major importance in their respective countries. In the Bolivian case, our study centered on La Paz, the capital city. La Paz had a population of over 400,000 at the time of our study and is the largest city in Bolivia. In addition, it is the political and financial center of the country and is an important industrial base. Its supplying food shed is almost literally the whole of Bolivia. Rice, a major staple crop, is obtained from the Santa Cruz area near the Argentine border. Beef is flown in from the tropical lowlands near the Brazilian border. Temperate fruits and vegetables are obtained from a highland area extending several hundred miles from La Paz, while tropical fruits and vegetables are obtained from lowland areas which are as much as several hundred miles from La Paz. While the city's inhabitants benefit from the diversified food product available to them, the food marketing system is required to handle a wide and complex variety of products.

The Northeast of Brazil is one of that country's poorest areas, with annual income averaging between $100 and $150 per capita. The LAMP research centered on Recife, a regional urban center of about one million people, and on the nine-state food shed area which makes up the northeastern region of Brazil. The total population of the Northeast

is about 27 million, of which two-thirds live in rural areas.

In addition to research into food system institutions and their relationships, five specific commodity studies were made. Rice, beans, and manioc were selected as staple food items that are widely consumed throughout the Northeast and also rank high as sources of farm income. Milk was studied because of its potential importance in the improvement of nutrition, especially among children. Finally, cotton was chosen as an example of an important cash crop in the Northeast.

The last major field study undertaken by LAMP was in Colombia. Our work there focused on Cali, the third largest city in Colombia with a population of approximately 900,000. In addition to primary research on urban consumer shopping patterns and urban food marketing institutions, the study included analysis of the food supply system centered in the surrounding Cauca Valley. To some extent, food supply sources outside the Cauca Valley were also studied.

A major research effort was expended in a variety of commodity studies for the major food items in the Cali market basket. Red meat, poultry and eggs, milk, grains and fruits and vegetables were analyzed with respect to production, processing, and distribution through the urban food system.

The Colombian study was perhaps the most advanced of the LAMP studies. Our research methodology, perceptions of problem areas, analysis procedures, and experience had been maturing through the Puerto Rico, Brazil, and Bolivian studies. Thus, many of the conclusions in this monograph reflect the detailed analysis of the Colombian research effort.

Population Dynamics

Population growth rates in the three countries have been about 3 percent annually over the past decade. Population growth in Brazil and Colombia as a whole has

exceeded 3 percent per year, and in Bolivia, the growth rate has been about 2.6 percent. The major cities have been growing at over 5 percent annually. We found the population growth rate in Cali and La Paz to be about 7 percent and in Recife over 5 percent. Studies have shown that most immigrants to these cities have little education, few work skills and limited economic resources to support themselves.

Since urban consumers can seldom produce their own food supply, demand for food marketing services has expanded in direct proportion to urban population growth. Consequently, traditional food marketing channels, facilities and institutions are under extreme pressure. In general, the response to this pressure has been an extension of the existing food marketing system, with a subsequent increase in the number of traditional assemblers, wholesalers and retailers.

In Recife and Cali, public efforts have been made to improve wholesale and/or plaza market facilities. The number of public market and neighborhood store retailers, wholesalers and specialized distributors has been increasing almost as fast as urban population. Central market areas designed to service smaller cities continue as focal points for food distribution, with consequent pressure on demand for marketing space in neighboring buildings and even in the streets. Similarly, except for selected products, traditional rural assembly markets continue to operate with more and more intermediaries. Rather than seeing an improvement in the efficiency of existing food distribution operations through gaining of scale economies and implementation of modern management methods, we have seen a multiplication of traditional operations. There is substantial public cost as wholesale centers and public retail markets expand haphazardly into surrounding residential and commercial areas.

Strong efforts should be made to take positive advantage of urban growth. Market reform programs could produce important marginal effects, but need not drastically affect the existing traditional food marketing system.

Income Levels and Food Expenditures

The urban areas around which our studies centered had mean annual per capita incomes of around $300. However, incomes were highly skewed (see Table 2.1). Median incomes as a percentage of mean income ranged from a low of 45 percent in Recife to a high of 67 percent in La Paz.[1]

TABLE 2.1 MEAN AND MEDIAN ANNUAL PER CAPITA INCOME

	La Paz	Recife	Cali
Mean	$272	$358	$280
Median	180	160	151
Median/Mean	67%	45%	54%

Clearly, average incomes are skewed upward by a small percentage of the population with very high incomes. In Recife, for example, the highest income groups represented only 14 percent of all families and earned over half the income, while low income groups represented 48 percent of the families and earned only about 14 percent of the income.

This income maldistribution has important effects on the food system. Major segments of the population have very limited purchasing power, and can afford few nonessential marketing services. Any tendency toward a more equitable income distribution will significantly increase demand for certain food products, manufactured consumer goods and marketing services. Unquestionably, highly skewed income distribution has severely limited effective demand for processed food products and manufactured consumer goods.

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[1] Market Coordination in the Development of the Cauca Valley Region - Colombia (Research Report #5, Latin American Studies Center, Michigan State University, East Lansing, Michigan), pp. 19-21; Market Processes in the Recife Area of Northeast Brazil (Research Report #2, Latin American Studies Center, Michigan State University, East Lansing, Michigan), pp. 4-4 to 4-8; Market Processes in La Paz, Bolivia (Research Report #3, Latin American Studies Center, Michigan State University, East Lansing, Michigan), pp. 26-28.

Given low average incomes and unequal income distribution, it is not surprising that the percentage of family incomes devoted to food purchases is very high compared to that in developed countries. Food expenses relative to total income average 42 percent in Cali, and 53 percent in both Recife and La Paz.[2] Though high, these average figures nonetheless understate the crushing burden of food expenditures borne by low income consumers.

In Recife, the lowest 60 percent of the families spend 70 percent of their income on food. In Cali, the lowest quartile devotes 82 percent of its income to food, and the next lowest 63 percent. Of the three cities, La Paz shows the lowest relative expenditures on food, with the lowest third spending 66 percent and the middle third 58 percent.[3]

Hence, in these three Latin American urban centers, over half the families are spending more than 60 percent of their incomes just for food, and many of the lowest income families spend 80 percent or more for food. The income elasticity of demand for food is relatively high. Using cross-sectional food expenditure data, we estimated overall income elasticity of demand for food to be 0.6 in Cali. Comparable data were not collected in Recife and La Paz. But, based on a comparison of consumer expenditure data, income levels, income distribution and other evidence,[4] income elasticities in Recife and La Paz are at least 0.6. This means that for every 10 percent increase in income, consumers will spend 6 percent more for food products and associated marketing services.

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[2]Comparable figures for the U.S. and industrialized countries of Europe are about 16 percent and 30 percent, respectively.

[3]For detail on food expenditures relative to income, see LAMP Colombia Report, pp. 30-31; LAMP Brazil Report, p. 4-11; and LAMP Bolivia Report, pp. 29-31.

[4]Robert D. Stevens, Elasticity of Food Consumption Associated with Changes in Income in Developing Countries, U.S.D.A.-ERS, Foreign Agricultural Economic Report No. 23, Washington, 1965.

What do these data imply? First, in addition to pointing out the plight of poor people, they show why effective demand and hence markets for manufactured products is so small. There is a very limited middle class that can afford to buy these goods. As a result of limited demand for their products, manufacturers are able to employ relatively few people. And, given low output levels, costs and prices are high, further restricting demand and employment. However, if incomes are increased and/or food costs are reduced, especially for lower income families, the impact on manufactured product sales and employment is significant. Furthermore, income improvements or reductions in food production and marketing costs would have an immediate positive effect on demand for food products--providing more employment opportunities in food production and marketing activities.

Finally, if reductions in food production and marketing costs could be achieved through greater efficiency, the greatest relative benefit would go to the lowest income consumers, since they spend the highest percentage of their incomes for food. Hence, if food costs were reduced, they could buy more food, purchase more nutritious foods, and considerably increase non-food expenditures (clothes, transportation, housing, personal items, etc.).

The consumption effect can be illustrated using actual income and expenditure data from the Cali research study. Table 2.2 shows the expected effect of a 10 percent reduction in food prices in Cali. It is assumed that the decline in food prices is brought about by reductions in both food production and marketing costs.[5]

For all income groups, the absolute value of food expenditures decreases while the absolute value of non-food expenditures increases as a result of the 10 percent reduction in food prices. All consumers are able to purchase the

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[5]Our data indicate that a reduction of this magnitude is entirely feasible through market system reform. See Chapters 3 and 4 of this report.

TABLE 2.2 ESTIMATED EFFECT OF A 10 PERCENT REDUCTION IN FOOD PRICES ON THE DEMAND FOR ADDITIONAL FOOD AND NON-FOOD PRODUCTS

Level of Per Capita Income	Expenditures per Capita Per Month (U.S. $)			
	Present		After 10% Reduction in Food Prices	
	Food	Non-Food	Food	Non-Food
$ 0 - $ 7.40	$ 4.45	$ 0.91	$ 4.17	$ 1.19
$ 7.41 - $14.20	6.64	3.83	6.22	4.25
$14.21 - $29.59	9.53	10.58	3.84	11.28
over $29.60	17.39	45.54	15.85	47.09
City-wide Average	$ 9.01	$13.44	$ 8.32	$14.13

SOURCE: Calculations based upon data from LAMP, Columbia Consumer Survey, 1969.

same diet as before at a 10 percent saving (i.e., on the average, $8.11 monthly as compared to $9.01 before the price change). But some of that savings would be used to buy more food. For all consumers, an average of $0.21 would be so allocated. Thus, increased physical volume would pass through the system, with the average consumer purchasing 2.6 percent more food with a total outlay of $8.32 ($8.11 + .21). The remainder of the savings ($0.69) would be spent on non-foods. The average consumer would spend 5 percent more for non-foods after the price reduction, with low income consumers having a 10-30 percent increase in non-food expenditures.

This example illustrates several potential development benefits from a 10 percent reduction in food prices. First, consumers, especially low income consumers, would be able to increase the amount of food consumed. And, perhaps more important, an improved diet should result for these households.

Second, consumers would be able to spend more on non-foods. Again, the lowest income consumers would benefit most in relative terms. The increase in non-food expenditures would amount to 30 percent for the lowest income group

in the Cali example.

Third, assuming that price reductions are brought on by improvements in production and marketing efficiency, there would be a 2.6 percent increase in volume demand for food products in Cali alone. This should have a positive net effect on incomes and employment in food production and distribution.

These changes would have a multiplier effect. The expansion in food demand would cause farmers to buy more seeds, fertilizer, insecticides, etc., which in turn would increase sales and employment in that part of the economy. The increase in jobs and wage payments in agriculture, food marketing, and non-food production and marketing would produce more income to be plowed back into goods and services produced in these industries and in personal services.

In the preceding example, we assumed perfect elasticity of supply for food and non-food products. That is, we assumed businessmen and farmers would be able to respond to new demand conditions without complications such as skilled or unskilled labor shortages, management shortages, capital goods limitations, legal or political constraints, market uncertainties, etc. In the real world, of course, there are a variety of restraints on supply expansion. Nevertheless, the basic principle holds. And by focusing development efforts on the marketing system as well as on production, some of the more critical barriers to perfect elasticity of supply can be eliminated.

Although there was not complete agreement between the market areas studied, the percentage of market basket expenditures spent on each major food type were generally similar in Cali and La Paz.[6] Table 2.3 shows data for the population as a whole.[7] Approximately 1/3 of the weekly

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[6]Equivalent data were not available from the Recife study.

[7]See pp. 32-33 in both the LAMP Bolivia and LAMP Colombia Reports for detailed data on food expenditure by income group.

TABLE 2.3 PERCENTAGES OF TOTAL FOOD EXPENDITURES BY PRODUCT TYPE (CALI, COLOMBIA - LA PAZ, BOLIVIA)

	Cali	La Paz
Meat and Fish	29.5	26.2
Poultry	5.3	3.7
Dairy Products	11.5	4.9
Grains	13.5	17.2
Fruits and Vegetables	16.8	22.9
Processed Foods	23.4	25.1
	100.0	100.0

food budget is devoted to animal proteins (meat and poultry products) in both La Paz and Cali. There appears to be no meaningful differences between income groups regarding percentage of food budget expended on beef and fish. In poultry products, on the other hand, a far higher percentage of the food budget of upper income families was devoted to this product, compared to lower income families.[8] In Cali, for example, upper income families spent three times as much on poultry as did lower income groups. However, in all cases, lower income families consume much lower absolute quantities of meat products than upper income families. Furthermore, lower income consumers purchase the poorer beef cuts (i.e., bones, tripe, stew meat).

In La Paz nearly 5 percent and in Cali over 11 percent of the average food budget is spent on dairy products. As with poultry products, there is a substantial difference in consumption between low and upper income families in both percentage of total food budget and absolute amounts spent. The disparity is much greater in Cali than in La Paz, perhaps reflecting the greater equality of income distribution in La Paz.

[8] Poultry products were relatively high priced, compared to beef, in the areas studied, in contrast to the U.S. situation.

Grains and fruits and vegetables absorbed a major percentage of the market basket in La Paz--nearly half of all food expenditures. In Cali, they were substantial, but less important. In both cities, there were no major differences across income groups with regard to percentages of the market basket devoted to fruits and vegetables. However, in low income families, fruit and vegetable purchases were concentrated in staple items like potatoes, onions, plantain, and tomatoes, while upper income families consumed a much wider variety of products. Grain purchases formed a higher percentage of expenditures for low income families, compared to upper income groups in both cities.

Processed foods account for about one-fourth of total food purchases, and percentages are generally similar across income levels.

Detailed nutritional studies were not undertaken by the LAMP group. Estimates made in Cali indicated low income families average 1,400 calories/day, with a protein intake of approximately 27 grams/day. The caloric intake is slightly below that suggested for warm climates, and the protein intake is substantially below the recommended 40-90 grams/day.[9] Thus, while market basket data indicate a reasonably balanced diet, the volume of food consumed suggests significant deficiencies, with all the associated health and vitality problems.

The Institutional Setting

In both Northeast Brazil and Colombia, the LAMP studies were conducted in coordination with a regional development agency, SUDENE in the case of Brazil and the Cauca Valley Corporation (CVC) in Colombia. No comparable agency existed in Bolivia at the time of the LAMP study, and our efforts were in conjunction with the Bolivian Productivity Center.

The Northeast of Brazil has, during the past

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[9] See LAMP Colombia Report, pp. 36-37.

half-century been an increasingly under-developed area of the country. A variety of governmental programs and organizations have been instituted to aid in its development. In December 1959 SUDENE was given overall control over the policies, plans and investments of all federal government agencies operating in the Northeast. In addition to the general development planning activity of SUDENE, there are a wide variety of government agencies dealing directly and indirectly with the food marketing system. These activities have two principal foci--commodity concerns and functional concerns. The functional activities cover the traditional range of storage services, price support programs, information services, and urban wholesale market development. While the totality of these programs is, in many ways, impressive, it is fair to say that at the time of the LAMP study, there was no overall system orientation and coordination of these various marketing related activities. It should also be noted that the major investment fund activity in the Northeast, law 34/18, was not accessible to food marketing intermediaries.

The mandate of the CVC in Cali is in no way comparable in scope to that of SUDENE. While it provided a regional focus and orientation for our work, it was less directly involved in food marketing activites than SUDENE. A federal agency, IDEMA, has broad and sweeping power in the agricultural marketing area. At the time of our study it had largely confined itself to price support programs, storage facility development, and the beginnings of a program to develop low cost food outlets in low income neighborhoods. These latter efforts were largely ineffectual. As in the case of SUDENE, no overall systems orientation toward food marketing existed in IDEMA at the time of our study.

Our key institutional tie in Bolivia was the Ministry of Agriculture. At that time their agricultural marketing policies and programs were centered on price support and anti-speculation (hoarding) activity. On occasion there was

direct government intervention in food marketing as the Army helped to provide transportation for peasants and their produce to major urban market areas. This effort to eliminate the middleman severely overstressed the Army's transport facilities and was soon abandoned. In general, there was no positive organized approach to food marketing system development.

Attitudes Toward Marketing

Collins and Holton pointed out in their landmark article on marketing in economic development that public attitudes about intermediaries limit development of effective public policies in marketing.[10] We have found that policymakers, as well as the average citizen, do not understand the necessary functions of marketing and the utility of those functions to society. In all countries where we have conducted research, we found public policies relating to marketing were founded on the premise that marketing activities add little or nothing to product value. Intermediaries, except for processors, are considered at best as necessary evils and in general as economic parasites. And even those who understand the concepts of time, place and possession utility are afflicted by a simplistic pure competition vs. monopoly view of markets. It is assumed that producers and retailers function in perfect markets because of large numbers, while assemblers and wholesalers are essentially monopolists because of limited numbers.

In general, horizontal analysis of channel elements is overemphasized. Essentially, a perfect competition model is assumed and the analysis of many development planners merely revolves around the structure of retailing, wholesaling, or some other element in the channel. If structure

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[10] Norman R. Collins and Richard N. Holton, "Programming Changes in Marketing in Planned Economic Development," Kyklos, Vol. 16 (January 1963), pp. 123-134.

is correct, then performance must be. Our analysis suggests that a total channel system approach must be considered. We explore this systems approach in Chapters 3 and 4.

As a result of traditional industrial organization analysis and emotional biases, we found strong pressures to eliminate the middleman, pass laws forbidding speculation, and institute price controls. The general policy stance on marketing was negative in all three countries reported on in this study.

The possibility of improving the performance of marketing functions through positive assistance programs had not been contemplated. The fact that our marketing research projects were accepted and supported does, of course, indicate that some government officials in each country held other views. Even so, many people fully expected our research findings to simply indicate how to better eliminate middlemen, legislate against speculation, and control prices.

CHAPTER 3

THE URBAN FOOD SYSTEM

A comprehensive effort to diagnose food system coordination problems requires a careful assessment of consumer demand characteristics and the institutional arrangements that are evolving to meet these demands for food and related marketing services. In the Latin American context, we have found it useful to focus considerable attention on the food systems serving the rapidly expanding urban areas as a first step in identifying problems of market organization that eventually connect back to the farms in rural areas.

The data presented in Chapter 2 provided an overview of consumer demand characteristics in three of the large urban centers we have studied. Low average income levels, skewed income distribution and high percentage of income spent for food were common characteristics of these consumer markets. In Chapter 3, we describe and evaluate the food retailing and wholesaling activities in these urban centers and identify opportunities for meaningful market reforms.

In our diagnosis of the urban food marketing system we are concerned with three issues: 1) how well the system performs in providing the price, assortment and convenience needs of consumers, especially in low and middle income areas, 2) how efficiently urban marketing firms are utilizing labor and capital, and 3) how effectively the various elements in the system are linked together.

The issue of channel linkages is extremely important in our approach to food marketing system analysis. Channel coordination and integration issues are often slighted in traditional analysis. Indeed, only in recent years have U.S. marketing scholars addressed themselves closely to the managerial problems of power, negotiation and leadership in distribution channels.

We are concerned with the degree of coordination between channel members, e.g., between retailers, wholesalers,

assemblers and farmers. Generally, coordination is viewed in the context of product flow, e.g., buying and selling contracts between distribution channel members. Our interest goes beyond product flow. We include communication flow--input and product price, demand, supply and quality information--as a major element in channel coordination. It is important to know how effectively channel members cooperate in promoting information dissemination useful to all parties. Financial flows are also of interest. Terms of payment and extension of credit, both short-term and medium-term, tell us much about the interrelationships between channel members. Finally, to what extent do key channel members act as change agents in developing modern managerial practices in the channel? Or, to what extent do key channel members provide management for other channel members, e.g., development of merchandising programs, store location analysis, automatic reorder systems and training programs. Modern chain management in Europe and the U.S. typically includes a major element of interchannel member management practices and programs.

In the remainder of this monograph, we will refer to both coordinated and integrated channels. "Vertical coordination" is used as a general term to describe all ways of harmonizing the vertical stages of a food production-distribution process. This harmonization can be effected through a market price system, an administratively regulated system, or some combination of the two. "Vertical integration" refers exclusively to situations where two or more stages of the process (such as retailing and wholesaling or farming and food manufacturing) are joined together into one business unit under a common management. Contract arrangements (e.g., voluntary chains), while a form of vertical coordination, are an intermediate step falling short of full vertical integration.

Our work in Latin America has convinced us that an integrated and/or coordinated channel will have impact in two

major areas. First, urban food distribution and marketing costs will be reduced. Second, and perhaps more important, the rural producer will be brought into a system of secure demand at stabilized prices, will receive incentive for improving product quality and/or sorting product into appropriate grades, and will be rewarded for product handling and packaging to reduce spoilage.

Outlet Patronage

Food Sales By Outlet Type

Table 3.1 shows the relative importance of the various types of food retailers in the three cities. In terms of the percentage of total food sales, public markets, street vendors and feira[1] stalls are still the most important outlet for food products in Recife and La Paz. In La Paz, however,

TABLE 3.1 PERCENTAGE OF RETAIL FOOD SALES BY TYPE OF RETAILER - CALI, COLOMBIA, RECIFE, BRAZIL AND LA PAZ, BOLIVIA

	Public Markets, Street Vendors or Feiras	Neighborhood Stores	Self Service & Specialty
Cali	20.1	55.2	24.7
Recife	50.3	27.5	22.2
La Paz	52.9	47.1	--

neighborhood stores account for nearly half of retail food sales and appear to be gaining in importance. There were no self-service stores or supermarkets in La Paz at the time of our study. Neighborhood stores are relatively less important

[1]This term is used to describe mobile public markets in Recife. These markets are set up in given locations for operation 2 days a week. Independent merchants operate stalls within the market. A wide variety of food and non-food household items are sold, but total sales are heavily weighted toward fresh fruits and vegetables.

in Recife because of the combined operation of mobile public markets (which are in effect a mobile neighborhood store) and the relatively large sales of self-service food stores. In Cali, neighborhood stores are clearly the dominant retail food outlets.

Although we have no reliable measure of change in outlet patronage over time, our best estimate is that self-service outlets are increasing their market share as they expand into middle-income areas. And, in the case of La Paz and Cali, it appears that neighborhood stores are increasing their market share at the expense of the public market system. This shift seems to be a result of the geographic dispersion of a growing population away from fixed location public markets.

In general, public markets are the major outlet for fresh fruits and vegetables. They have a wide assortment of offerings in terms of variety, quality and price levels, while neighborhood stores and supermarkets are much more restricted in their offering, generally confining themselves to only the high volume products. Although stalls selling staple goods and processed foods can be found in the public markets, neighborhood stores and self-service operations are the major outlets for these products.

Consumer Shopping Patterns

There appears to be a high degree of correlation between income level and type of outlet patronized. In both Cali and Recife, self-service stores are rarely used by lower income families, and are utilized principally by upper income groups. Neighborhood stores, on the other hand, are a major food outlet for low and middle income families, while being used by a relatively small percentage of upper income families. Public markets are used by all groups, the degree of use depending on physical proximity.[2]

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[2]For detailed information on store patronage see, LAMP Brazil Report, pp. 4-14 to 4-16 and LAMP Colombia Report,

To those accustomed to the large sums spent on the average U.S. supermarket trip, the average expenditure in the areas studied by LAMP are quite low.[3] Purchases in neighborhood stores ranged from an observed mean purchase of $0.21 in La Paz to a reported $1.79 in Recife.[4] In public markets, the mean purchase per stall visited was observed to be $0.15, while the mean reported purchase per trip to permanent markets in Recife was $3.62. In Cali, the average reported purchase per major shopping trip was on the order of $3-4.[5] Clearly, any major reform programs in the retail sector will have to take into account these purchase volume data.[6] It should be noted, however, that the mean reported purchase in self-service stores in Recife was $10.32.[7]

Another major characteristic of consumer shopping patterns is the frequency of shopping trips. Shoppers report two to four trips per week to neighborhood stores in

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pp. 52-54.

[3]Low average sales per customer are also common in European countries with traditional marketing systems, e.g., Italy and, to a certain extent, France.

[4]Consumer-retailer interactions were observed and recorded in the La Paz study, whereas in Recife and Cali consumers were only asked to report the amount spent on food on the previous major shopping trip.

[5]For details on purchase volumes, see LAMP Brazil Report, p. 4-19, LAMP Colombia Report, p. 56, and LAMP Bolivia Report, pp. 50-51.

[6]These purchase volumes do not represent an insuperable obstacle, however. In 1973, sales per customer transaction was $7.47 in American supermarkets. See The Supermarket Industry Speaks - 1974 (Supermarket Institute, Inc., Chicago, IL, 1974), p. 8.

[7]It may also be noted that field research by the authors in Panama suggests purchases of $10-15 in working class self-service stores are not unusual.

Recife and Cali. The low mean purchase volumes observed in La Paz suggest daily shopping trips to the neighborhood store. Trips to the public market are less frequent, depending on geographic proximity. Although not precise, our data suggest a trip every 4-5 days.

Thus, there is a considerable degree of consumer travel expended in the food purchasing process. It is often thought that such trips are relatively costless in societies where the opportunity cost of time is fairly low. However, there is a real monetary cost involved, as our data in Cali indicate that middle and lower income consumers, representing over 70 percent of the population, spend from 2-1/2 to 5 percent of their food budget on out-of-pocket transport costs for major food shopping trips.[8]

Factors Affecting Store Patronage

In LAMP consumer surveys, the major reasons given for shopping in public markets were variety, lower prices and product quality. Fruits and vegetables are generally the major products purchased in public markets, though meat is also an important item. These products are inherently difficult to handle, and are doubly so in a marketing system where grading and sorting are virtually nonexistent. Thus, the neighborhood store owner, with a limited market area, finds it difficult to manage more than a small, restricted assortment of the major selling fruits, vegetables and meats. The specialized public market operators, on the other hand, service customers of many income levels and from a fairly large geographic area. The consumer, therefore, performs the sorting and grading function, removing much of the risk from the retailer. Furthermore, given the large volume of customers, the retailer is able to specialize, which is a particularly important factor in product procurement.

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[8] See LAMP Colombia Report, pp. 56-57.

Neighborhood stores are an important element in the retail mix because of the consumer need for locational convenience. As noted, the majority of urban families have low incomes and little or no cash reserves. Quite often, there is a lack of suitable storage space, in terms of either refrigeration or security. Therefore, many food purchases are made on a day-to-day basis. For most consumers, the neighborhood store is the only food outlet geographically located to provide cheap and timely physical access. In Recife, the feiras cater to the consumer need for locational convenience, although only during certain days of the week.[9]

It is often thought that neighborhood stores play a major role in food retailing because of credit extension or intensive personal interaction between customer and retailer. Our consumer surveys, plus observed behavior in La Paz, indicate that credit extension plays only a modest role in the consumer's choice of store outlet. Data from extensive observation in La Paz show that the typical neighborhood store does not perform a social function. Very little communication occurred beyond that necessary for economic activity.[10] Consumer attitude studies in Cali and Recife did not show social factors to be of importance. We conclude, then, that social factors are a minor factor in store patronage motivation.

Retailer-Wholesaler Characteristics

Traditional retail and wholesale institutions were the major elements in the urban food distribution systems of the three cities studied. However, trends toward patronage of self-service outlets, with their related rationalized supply

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[9]While the feira has the advantage of providing scale to participating retailers, it appears to be a uniquely Brazilian institution.

[10]See LAMP Bolivia Report, pp. 46-50.

practices, were apparent in both Recife and Cali. But in La Paz, at the time of our study, there was no indication of any shift toward modern retailing, with its concomitant demands on the supply sector.

Food Retailing

We have seen that there is a reasonable degree of similarity between consumers in the cities studied. To see whether the retailers serving consumers are similar, and hence susceptible to a "universal" approach, we turn now to an analysis of the various types of retailers. There are two principal types of traditional retail outlets--public markets and neighborhood stores. Public market outlets can be further subdivided by whether the retailer is a stall operator or street merchant and by product line specialization, i.e., fruits and vegetables, meat, dry goods. Dry goods were generally of minor importance in the public market systems studied.

Most consumer purchases are made in two basic types of retail food outlets--public market stalls (including street merchants and mobile market fairs) and neighborhood stores. Table 3.2 shows the total number of each type of retailer in Cali, La Paz and Recife and the average number of families per retailer in each of the three cities. The number of retailers per family is quite low when compared to the U.S.

TABLE 3.2 NUMBER OF RETAILERS IN CALI, LA PAZ AND RECIFE

	Cali	La Paz	Recife
Public Market Stalls	2,398	3,106	1,128
Street Merchants	1,357	2,255	5,915
Neighborhood Stores	4,241	4,445	2,285
Self-Service Stores	54	--	42
Specialty Outlets	864	--	5
Total	8,914	9,806	9,375
Number of Families Per Retailer	15	8	17

average of 700 consuming families per food retailer. This means, of course, that the sales volume per retailer must also be quite low.

Table 3.3 compares some of the business and personal characteristics of public market operations in Cali, La Paz and Recife. Recife data are, unfortunately, aggregated and hence not directly comparable to the more detailed data available from Cali and La Paz. The substantial degree of similarity between Cali and La Paz suggests a certain universality (at least within Latin America) of public market operations. The higher overall sales found in Brazil are probably due to the custom of mobile street fairs, which increases the effective consumer market for these operators.

TABLE 3.3 SELECTED CHARACTERISTICS OF PUBLIC MARKET RETAILERS

	Cali	La Paz	Recife
Annual Sales Volume			
All Retailers	$5,200	$4,800	$10,200
Fruit and Vegetable			
Stall Operators	3,400	3,670	--
Street Merchants	2,700	2,750	--
Assets			
Fixed	--	--	--
Inventory	$34	--	$67
Size (in sq. meters of floor space)	3.0	2.5	3.0
Years in Business*			
Stalls		10	5+
Street Merchants		5	
Years of Education - Owner			
Stalls		1.5	2.1
Street Merchants		1.6	

*Fruit and vegetable operators only.

In general, we can characterize public market operations as being of very small scale, specialized by product, and manned by retailers with low education levels who eke out a marginal existence from their work. In all areas, meat

retailers have the highest volume and margins. It appears that there is a reasonable level of continuity in public market operations, especially for stall operators.[11]

The neighborhood store is the staple food counterpart of the public market system. They provide personalized clerk service and are generally located in remodeled garages or ground floor rooms in residences. Occasionally, larger scale neighborhood stores, also known as graneros in Cali, are found in facilities devoted entirely to food retailing. The product mix of neighborhood stores varies substantially and is quite often a function of size. Smaller stores tend to be beverage and snack outlets as much as they are food stores.[12] Generally, they carry only staple dry and processed foods. The larger neighborhood stores, in both size and sales volume, carry the major fruits and vegetables and meat. These perishable items are frequently handled on a leased space basis. Table 3.1 shows some major characteristics of neighborhood stores. Although a three country comparison of sales volume, assets invested and space utilized indicates wider disparities than existed in the case of public market retailers, they are still generally in the same order of magnitude.

TABLE 3.4 SELECTED CHARACTERISTICS OF NEIGHBORHOOD STORES

	Cali	La Paz	Recife
Annual Sales Volume	$8,635	$5,680	$13,500
Assets			
Fixed	$308	$136	n.a.
Inventory	185	177	427
Space - m^2	26	16	22
Years of Education - Owner	5	5	3
Years in Business	5	6	5

[11] In some markets in La Paz, stalls are handed down from mother to daughter or among family members.

[12] Our data in Cali indicate that small tiendas derive much of their profits from beverage sales. See LAMP Colombia Report, p. 46.

The number of new independent neighborhood stores is apparently increasing constantly in response to population growth. There is also some evidence of a high rate of business failure among neighborhood retailers. In Cali, for example, 30 percent of those interviewed had been in business 1 year or less; in La Paz, 50 percent had been in business 2 years or less; in Recife, 40 percent had been in business 4 years or less. The data seem to suggest two populations, one highly stable and the other highly unstable.

Self-service stores did not exist in La Paz. In Cali, 54 such stores accounted for 12.5 percent of retail food sales. And in Recife only 42 stores accounted for 22 percent of all retail food sales. Table 3.5 shows that average annual sales for self-service stores were quite high (over 21 times as great as neighborhood stores).

TABLE 3.5 SELECTED CHARACTERISTICS OF SELF-SERVICE FOOD STORES

	Cali	Recife
Annual Sales Volume	$275,000	$375,000
Assets		
Fixed	$124,000	$ 20,600
Inventory	32,000	26,553
Space (in sq. meters of floor space)	258	243

Food Wholesaling

As might be expected, the largely traditional retail sector has its counterpart in a wholesale sector that largely divides along product lines. There are two types of grain and staple processed goods wholesalers--large specialized wholesalers selling only in wholesale volumes and smaller wholesaler-retailers selling in any quantity to small retailers or consumers. Fruit and vegetable wholesalers usually specialize in three to five related products. There are two levels of meat wholesalers--those who purchase live animals and have them slaughtered and sell by the carcass or

half carcass, and those who break the carcass up into wholesale cuts for smaller retailers.

Table 3.6 shows the number of grain and staple goods and fruit and vegetable wholesalers in Cali, La Paz and Recife.

TABLE 3.6 NUMBER OF WHOLESALERS IN CALI, LA PAZ AND RECIFE

	Cali	La Paz	Recife
Grain and Staple Goods			
Specialized Wholesalers	60	5	102
Wholesaler-Retailers	43	39	n.a.
Fruits and Vegetables	450	n.a.	139[a]

[a]This number is a significant underestimate since market stalls operating largely as fruit and vegetable wholesalers in several market plazas were not included.

We found a high degree of product specialization in food wholesaling in all areas. The largest volume component in food wholesaling is specialized cereal and processed food wholesalers. Typically, these wholesalers specialize in 10 to 15 items such as rice, beans, corn, cooking oil, sugar, panela (in Colombia), manioc flour (in Brazil) and other processed foods. They buy in relatively large volumes on the national and (especially in Bolivia) international markets. Their major functions are breaking bulk and transporting. Occasionally they perform some storage, but frequently they never take physical possession of the product. Their major customers are other wholesalers, wholesaler-retailers, institutions (e.g., hospitals, restaurants, schools) and retailers. A minimum size sale is normally one bag or box. These wholesalers essentially perform the function of coordinating and arbitrating national markets for nonperishable products.

Table 3.7 shows the major characteristics of grain and staple goods wholesalers. Separate data for specialized wholesalers are available only for Cali. In La Paz, where food imports are important, there are only five large

importers performing the function of specialized wholesalers and comparable data are not available. Unfortunately, in Recife the research methodology made no distinction between the two types of wholesalers--although both exist.

TABLE 3.7 SELECTED CHARACTERISTICS OF GRAIN AND STAPLE GOODS WHOLESALERS

	Cali		La Paz	Recife
	Specialized	Wholesale/ Retail	Wholesale/ Retail	Combined
Annual Sales	$640,000	$220,000	$32,500	$190,000
Assets - Inventory	51,000	8,300	1,200	33,700
Space (sq. meters)	300	160	20	214
Years of Education Owner	9	6	8	7
Years in Business	14	7	8	13

In order to supply the small-volume transaction requirements of large numbers of tiny retailers, the wholesaler-retailer has evolved. These are merchants who carry a broad line of nonperishable foods and household supplies. They are willing to sell any volume of product desired by the retailer or consumer. They are normally located in close proximity to each other, to the specialized wholesalers and to fruit and vegetable wholesalers (i.e., in the so-called wholesale market area of the city). The consumer who wishes to take advantage of their lower prices (in comparison to neighborhood stores whom they generally supply) must be willing to suffer the associated transport cost, time expenditure and inconvenience. The functions of the wholesaler-retailer are breaking bulk, storage, and sometimes credit and delivery. They provide the retailer with a single, relatively convenient place to purchase his major items in the quantity desired. They are an important, but extra cost, element in traditional food production-distribution systems.

Fruit and vegetable wholesalers are specialized by

product or product group. They are located in or around the central market area of the city. In Recife, a special temporary market area for such wholesalers had been in use for several years. Also, some such wholesalers operated out of stalls in different public markets around the city. A new central wholesale market is now in operation in Recife. In La Paz, fruit and vegetable wholesalers are located in the central market area, with many having no permanent place of business. Some operate in the streets or inside the central retail market plaza. In Cali, so-called "warehouses" around the central market area are used by fruit and vegetable wholesalers on a daily rental basis. Their major function is breaking larger-sized purchases down to retailer-sized purchase units. Some wholesalers travel to rural areas or make other arrangements to purchase and transport supplies from producing areas. Others purchase relatively large quantities (10 to 15 bags or crates) direct from producers or assemblers in the urban market. The products are sold later in the day to retailers desiring smaller quantities.

It is difficult to provide aggregate information on the characteristics of fruit and vegetable wholesalers because of their diversity. Potato wholesalers, for example, may have a 20 square-meter permanent place of business with sales of over $50,000 per year, in contrast to a citrus product wholesaler having no permanent place of business and averaging as little as $10,000 in annual sales.

Retailers generally buy from a few regular suppliers. Retailers of fruits and vegetables utilize a great number of regular suppliers, as the lack of grading forces them to personally evaluate the offerings of a variety of wholesalers. For any one product, retailers in all three cities reported having one to three regular suppliers. A major problem is that many wholesalers, especially for perishables, are highly specialized, thus forcing retailers to contact and deal with a large number of wholesalers. Since perishables are purchased on an every-other-day basis, the retailer must expend

substantial energy in the purchasing function. In Cali, retailers spend from 2 to 3 hours per day purchasing perishables.[13] In the case of staples and processed goods, the problem is not so acute since purchases are usually made on a weekly or monthly basis. Also, dry goods wholesalers tend to be more "full-line" than perishable wholesalers.

Insofar as we have been able to determine, the relationship between retailers and wholesalers is not routinized. Each purchase is to a certain extent "new" and must be negotiated as to price, quantity and terms. In-depth discussions with retailers indicate that there is often a tacit on-going understanding between retailers and wholesalers with regard to price, quality and terms. However, there was little indication that automatic ordering and replenishment procedures existed to any extent.

Credit extension to retailers follows a similar pattern in the three studies. Neighborhood stores are least likely to obtain credit, especially for fruits and vegetables. Less than 10 percent of neighborhood stores reported receiving credit in La Paz and Recife, while some 30 percent received credit on grains and staples in Cali. With regard to public market operations, approximately half in La Paz and Recife reported receiving credit as opposed to approximately one-third in Cali. It should be noted that there are some differences between product lines and between stall operators and street merchants. The latter are much less likely to receive credit. The reluctance of suppliers to extend credit to neighborhood stores is understandable, given their low business life expectancy and marginal mode of operations. On the other hand, apparently, stall operators are seen to be more stable. Interestingly, self-service stores, which buy in substantial quantity and are well financed and stable, buy

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[13] Michael T. Weber, Problems of Reorganization of Cali Food Retailers' Procurement Activities in the Planning of a Central Wholesale Market Facility. Unpublished masters thesis, Michigan State University, 1972.

perishables on a cash basis. The cost of credit is extremely high, ranging from annualized rates of 85 percent in La Paz to rates in excess of 500 percent in Recife.

As might be expected, traditional retailers have little influence over their supply channel. An average purchase by neighborhood stores in La Paz would aggregate little more than $70, even if all related products were lumped together. The average public market operator in La Paz will purchase little more than $5 worth of any one product at any one time. While comparable figures are higher for neighborhood stores in Cali, it is clear that traditional retailers have little power to enforce quality requirements, to demand such services as sorting, grading, delivery or credit, or to induce a wholesaler to arrange a scheme to routinize purchases and thus reduce transaction time for both parties.

Urban Food System Performance

There are obvious difficulties in measuring urban food system performance. Evaluation of gross and net profit margins, relative to either sales or capital employed, is a theoretically useful measure. However, there are substantial problems in determining an absolute standard against which these ratios can be compared. Cross country comparisons are extremely tenuous, given different labor and capital costs and given different degrees of channel integration and services performed by each channel member. Judgments can be made regarding productivity in use of labor and capital of different types of outlet, and we have attempted to do this in a limited way.

As noted earlier in this chapter, the degree to which consumers are adequately serviced is an important evaluative element. Although difficult to quantify, the elements of locational convenience and product assortment are useful measures of performance. The system can also be judged on the basis of relative prices in upper vs. low and

middle income neighborhoods. That is, does the food production-distribution system provide an appropriate price-quality mix for each customer group?

Finally, the food marketing system is evaluated in terms of the degree to which the distribution channels are coordinated or integrated. Of special importance here are the retail-wholesale linkage and the urban distribution-rural supply linkage.

Economic Evaluation

Both gross and net margin data are available in some detail from the La Paz and Cali studies, while gross margin data only were collected in Recife for selected major food items. Analysis of the net margin data are subject to the following qualifications. First, we had no measure of spoilage in the La Paz analysis. And while we estimated spoilage and included it in the Cali analysis, we believe the estimates may have been too low. Thus, the net profit figures reported here are undoubtedly on the high side. Second, net margin and profit data include both return on capital and return for the owner's labor, i.e., a shadow salary. In most cases, if the owner's labor is taken out at the minimum wage level, there is little or no return on the capital employed in the business.

Notwithstanding the difficulties of analysis, there is still some value in analyzing economic returns in urban food marketing.

The wide variety and condition of fruits and vegetagles marketed makes inter-county (or even intra-country) comparison difficult. Table 3.8 shows representative data from La Paz and Cali of fruit and vegetable retailing and wholesaling.[14] As can be seen, gross margins at wholesale are comparable to those at retail. This is somewhat surprising, since one would

[14]Comparable data were not available for Recife. For details, see LAMP Bolivia Report, pp. 73 and 105-107, LAMP Colombia Report, pp. 66, 90 and 193, and LAMP Brazil Report, pp. 5-40 and 5-70.

TABLE 3.8 ECONOMIC RETURNS--FRUIT AND VEGETABLE RETAILING AND WHOLESALING

	Cali	La Paz
Retail Market Stalls		
Gross margin	12.2%	19.3%
Net margin	8.9%	17.4%
Annual net profits	$301	$639
Wholesale Operations		
Potatoes		
Gross margin	12.0%	18.3%
Net margin	5.8%	9.4%
Annual net profits	$2544	$1450
Tomatoes		
Gross margin	15.0%	
Net margin	10.2%	
Annual net profits	$1704	
Vegetables		
Gross margin		27.8%
Net margin		16.7%
Annual net profits		$771

expect lower margins at the wholesale level, where volume would compensate for reduced unit margin. These data suggest a lack of competitiveness and/or higher uncertainty costs and spoilage at the wholesale level. Data from Recife on individual product gross margins suggest a pattern similar to that in La Paz.

Absolute dollar profits are certainly not excessive in the retailing of fruits and vegetables. While absolute profit levels are considerably above the minimum wage in certain areas of wholesaling, it must be remembered that product spoilage undoubtedly reduces the "bottom line" numbers in Table 3.8 substantially.

As noted earlier, meat is a major element in the food budget of the areas studied. Some of the highest profit levels in the traditional urban food system are found in the institutions specializing in meat marketing. Except for Cali, our

data reflect operations at the retail level only.[15] As can be seen from Table 3.9, profits at both retail and wholesale levels are higher than those for either fruit and vegetable or staple goods operations. In the case of Cali, these profit margins are primarily the result of limited space availability within the public markets for meat retailing and municipal restrictions on the number of meat wholesalers who can purchase through the city slaughterhouse.

TABLE 3.9 ECONOMIC RETURNS--MEAT RETAILING AND WHOLESALING

	Cali	La Paz	Recife
Retail Tiendas			
Gross margin	n.a.	18.5%	20.0%
Net margin	n.a.	15.4%	n.a.
Annual net profit	n.a.	$1685	n.a.
Retail Public Market			
Gross margin	14.5%	16.0%	13.7%
Net margin	10.7%	14.4%	n.a.
Annual net profit	$3432	$1948	n.a.
Wholesale			
Gross margin	14.5%	n.a.	n.a.
Net margin	12.0%	n.a.	n.a.
Annual net profit	$9324	n.a.	n.a.

The marketing of staple goods is more remunerative than fruit and vegetable distribution, as can be seen in Table 3.10.[16] The only data available for Recife were on gross margins by specific product; these are at a level comparable to equivalent products in Cali and La Paz. High levels of absolute profit are not found in retailing. As was the case in fruit and vegetable marketing, relatively larger absolute profits are made in wholesaling. This is not

[15]For details, see LAMP Brazil Report, p. 5-40, LAMP Bolivia Report, p. 76, and LAMP Colombia Report, pp. 66 and 90.

[16]For detail, see LAMP Brazil Report, p. 5-40, LAMP Colombia Report, pp. 68 and 88, and LAMP Bolivia Report, pp. 75 and 93.

surprising, since wholesalers were generally better educated and had considerably more business experience than retailers. Also, and importantly, wholesalers have substantially more capital invested in their business. Thus, their returns should properly be seen as a return to capital, as well as a return on their managerial time.

TABLE 3.10 ECONOMIC RETURNS--STAPLE GOODS RETAILING AND WHOLESALING

	Cali	La Paz
Retail		
Tiendas		
Gross margin	12.9%	14.8%
Net margin	6.7%	13.8%
Annual net profits	$328	$785
Small graneros		
Gross margin	11.3%	
Net margin	4.1%	
Annual net profits	$954	
Wholesaler-retailer		
Gross margin	3.4%	5.8%
Net margin	1.2%	2.4%
Annual net profits	$4755	$871
Specialized Wholesalers		
Gross margin	2.8%	
Net margin	0.8%	
Annual net profits	$7272	

A measure of the efficiency with which labor and capital are employed in traditional urban food marketing institutions can be obtained by comparing productivity in various-sized outlets. In the Cali study, data were available as shown in Table 3.11. The two smallest-volume outlet types are dominant in number of retail outlets in the city and together account for 30 percent of total retail food sales. Thus, much of the city, especially the lower income areas, is serviced by inefficient outlets. Gross margins are lower as volume increases, although to a certain extent this is a function of product mix. Economic efficiency increases as

volume increases. The data certainly suggest that even traditional, personal service retailing has potential for substantial productivity increases if higher volume can be obtained through carrying wider product lines and better assortment and through the institution of more innovative and aggressive retail management.

TABLE 3.11 EFFICIENCY MEASURES OF VARIOUS-SIZED PERSONAL SERVICE RETAILERS--CALI, COLOMBIA

	Annual Sales Volume			
	$4895	$23,510	$72,830	$164,450
Percent of Cali Retail Sales	13.6	16.3	11.4	4.8
Percent Gross Margin	12.9	11.3	8.6	6.7
Annual Sales/$ Fixed Assets	$18.70	$52.95	$94.70	$80.40
Annual Sales/Square Foot	$20.80	$62.40	$123.10	$126.30
Annual Sales/Employee	$2590	$2705	$24,275	$36,615

Meeting Consumer Needs

The food marketing system in each of the areas studied is clearly deficient in one major area, that of supplying low income consumers at a reasonable price level. In all cases, the poor paid more. In Cali and Recife, price studies of both fruits and vegatables and staple goods were conducted. In both cities, perishables were 20-30 percent higher in low income area outlets than in outlets patronized by upper income consumers. For staple goods, the comparable price differential was 5-10 percent. In La Paz, the price comparison was made for perishables only, with low income consumers paying over 10 percent more than shoppers in upper income markets. The higher prices paid by low income consumers were not compensated for by higher quality. Indeed, the reverse was true; in the case of both Recife and La Paz, upper income shoppers also obtained higher quality products.

The relatively high prices paid by low income consumers are directly related to problems of store location. A major theme running through both the Cali and Recife consumer studies was the importance of locational convenience in store choice.[17] Neighborhood stores, for example, were not patronized so much for product assortment offered, credit extended or social considerations, but for geographic proximity. Public markets were generally patronized because of the wide variety and assortment of products offered. And self-service outlets are judged by those who utilize them to have the lowest prices.

As noted earlier, lower income shoppers in Cali spend a substantial percentage of their food budget on transport to and from the main market areas. In our opinion, this is a part of the food cost and further exacerbates the heavy burden of food expenditures on low income families. The task, then, becomes one of combining reasonable variety and assortment, low prices resulting from scale economies and vertical integration, and locational convenience. We believe this can be accomplished, as shown in the next section.

Channel Linkages

In all three areas studied, there is a link in the channel that does not exist in modern food distribution, i.e., the wholesaler-retailer. As a result, there is an additional cost and margin in the system servicing small retailers, which is a major outlet for low and middle income consumers. Without doubt, the wholesaler-retailer link fills an important role in the existing system. The point is, however, that the cost additive effects of such an institution are not perceived by the analyst unless food distribution is considered in a systems sense. And cost reductions can occur only if this link is made obsolete through planned marketing programs.

Our data amply document the difficulties faced by

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[17] See LAMP Brazil Report, p. 4-17 and LAMP Colombia Report, pp. 57-58.

retailers in provisioning themselves. Inordinate amounts of time, with subsequent high transaction costs, are expended by retailers in frequent shopping trips to personally inspect, check prices and transport merchandise. In effect, retailers become passive sellers and active buyers. The reverse would be more appropriate. Wholesalers, in turn, are faced with uncertain demand from a myriad of small retailers. Consequently, they have generally been unwilling to grade, provide delivery, provide low-cost credit, and make routinized order procedures available. Wholesalers also operate with a passive selling, active buying orientation. In both retailing and wholesaling, managerial attention is focused principally on procurement rather than on an analysis of customer needs and adjustment of internal operations to efficiently meet those needs.

Opportunities for Urban System Reform

Wholesale Market Reform Programs

A major food marketing issue in both La Paz and Cali was the elimination of congested and unsanitary food wholesaling areas in the center city. This issue is a major concern in many other Latin American cities. Typically food wholesaling takes place in physical facilities located in a central part of the city where food retailing is also a major activity. Evolution of these food wholesaling areas has been unplanned with regard to products handled, transportation facilities and routes, physical facilities for storage and exchange, and effect on the surrounding neighborhood. The result is urban blight and highly inefficient food distribution.

All too often, the reaction of government is to solve the problem through development of physical facilities alone. Our experience suggests that key physical facilities should not simply be modernized or sanitized. First, careful analysis must be made of retail-wholesale exchange and physical distribution transactions, as well as wholesale-rural assembly

exchange and physical distribution transactions. In short, the facility must fit within the managerial and institutional framework of the system that utilizes it.

Second, the development of physical facilities provides an invaluable opportunity for inducing change in both the retailer-wholesaler and wholesaler-assembler/farmer interfaces. Incentives can be offered, in the form of physical facilities and credit, to aggressive and innovative wholesalers to move them toward development of chain operations, as described in the next section. Transportation and physical handling facilities can be developed to aid in the routinization of buying-selling relationships between retailer-wholesaler and wholesaler-assembler/farmer. For example, grading and sorting facilities can be provided and assistance given for development of commercially acceptable standards. Specialized transport operations can be developed. Information systems on supply and demand conditions and price movements can be instituted within the context of a physical change at a time when new practices are most likely to be accepted.

In Bogota, Colombia, a mixed economy corporation was created by public agencies to plan, construct and operate an integrated program of urban distribution reform. The emphasis was much broader than physical facility improvement. Studies were done to identify opportunities to improve overall system performance. Training programs were made available to wholesalers and retailers before a new wholesale market facility was completed. Special technical assistance was made available to retailers, wholesalers, assemblers and farmers to encourage adoption of managerial improvements appropriate for efficient operation in the new wholesale market facility. In some cases, special credit arrangements were used to encourage adoption of suggested management practices. Finally, a number of other public services were offered to improve market performance, such as collection and timely dissemination of market information, packaging assistance, and development of a commodity exchange.

Development of Urban Food Chains

The feasibility of improving the efficiency of urban food marketing has been documented in the LAMP studies, perhaps most extensively in the Cali report. In the Bolivian case, admittedly based on rough calculations, we estimated that retail food price reductions on the order of a minimum of 5 percent were highly likely if scale could be gained at the retail level. (No estimates were made of possible cost reductions in wholesaling.) Such scale appeared attainable within a market area in which no consumer need walk more than 3-4 blocks to a modern outlet.[18]

With regard to Recife, scale economies gained by self-service outlets have already brought price reductions. Improved channel integration has also had a substantial impact on price levels through lower procurement costs. The ability of two large supermarket operations to bring pressure to bear on supply channels was significant. In one case, that of Bom Preco, integration backward extended into partial ownership of rice milling facilities, and resulted in price reductions at the retail level on the order of 10-15 percent. Another supermarket chain, Comprebem, was faced with a monopoly in the form of a poultry cooperative in the Recife area, which was the only large-scale supplier adequate to serve Comprebem needs. By virtue of its scale, Comprebem shifted its egg purchases to the large cooperatives in southern Brazil and was able to bring competitive pressures to bear upon the Recife supplier. Local prices at the consumer level were subsequently reduced. Although the egg case is only one example, it clearly illustrates the competitive pressures large-scale retailers (or wholesalers) can have on the system.[19]

Another interesting element of the Recife situation was the extent to which the actions of one supermarket

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[18] See LAMP Bolivia Report, pp. 204-216.

[19] See LAMP Brazil Report, pp. 6-5/6.

operation with a low-margin, high-volume orientation was able to affect a large part of the overall retail system. Immediately, competitive supermarkets were forced to reduce their prices and change their price policies. In turn, neighborhood stores within the market area of supermarkets were forced to lower their prices. This chain effect of dynamic price competition resulted in margin declines of nearly one-third.[20]

The supermarket chains in Cali were not price leaders and confined their efforts to upper income areas. Consequently, to obtain some estimate of possible economic gains from market system reforms, we simulated a revised system. We estimated at least a 6 percent reduction in food prices for low and middle income consumers if modern retailing and wholesaling can be introduced.

The specific calculations are documented in the Cali study and are not reproduced here.[21] It is important, however, to delineate the approach taken and the major factors considered. First, we were greatly concerned that no attempt be made to merely transplant U.S. supermarkets to low and middle income market areas. Rather, we looked for an operation that would give scale economies and yet be neighborhood in scope, i.e., dependent on walk-in traffic. As a consequence, we recommended outlets of approximately 2,000 square feet with a minimum of capital equipment. Such outlets would be viable with a market radius of only three blocks and extremely profitable if the market area increases to a four-block radius.

Second, locational convenience was to be combined with an assortment that included the full range of major food items. Specifically, this meant that meat and fruits and vegetables would have to be handled to a far greater extent

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[20] See LAMP Brazil Report, pp. 6-3/4.

[21] See LAMP Colombia Report, pp. 97-109.

and with more competence than has been the case with existing neighborhood stores. Clearly, this is a difficult task as the handling of perishables is no easy matter even in developed countries. Included in our pro forma economic analysis were well paid produce and meat managers. However, it may be more feasible to develop a system of leased operations for perishables, and this should be considered carefully.

Third, we feel that dynamic reform at the retail level is only possible if reform also is managed at the wholesale level. Efficient food distribution can be achieved through the development of a variety of competitive wholesale-retail chains. The emphasis should be on governmental programs encouraging a competitive balance among the following types of wholesale-retail chains: (1) private chains--vertically and horizontally integrated chains of retail stores served by a single wholesale warehouse, all under single ownership, (2) retailer-owned cooperative chains--cooperative organization of independent retailers into an integrated chain served by a single cooperatively owned warehouse, (3) voluntary chains--contractual organization of independent retailers into an integrated chain served by a single independent wholesaler, (4) consumer-owned cooperative chains--a federation of consumer cooperative retail stores serviced by a cooperatively owned warehouse, and (5) government-owned retail chains--a group of government-owned retail stores served by a single government warehouse.

A mix of chain types is necessary to force competitive stress. While incentives help induce change, appropriate levels of competitive pressure will also induce businessmen to take advantage of or to ask for incentives. We envision a balanced competitive system of food distribution among such modern retail-wholesale chains.

Fourth, the program we envision requires a new approach to supervised credit. While any banker must clearly be concerned with the safety of the principal lent, as well as the future flow of interest, development bankers should

also be concerned that their scarce resource be used to greatest advantage. The skills required to manage modern food wholesale and retail firms are in short supply in the areas studied. It is therefore critical to include a technical-managerial training component in any loan program. This educational component should take the form of ongoing consultations, as well as initial training courses.

The focal point of management training should be the wholesaler, who acts as channel captain. In most modern food distribution chains, the wholesaler plays a prominent role in tne provision of management services and advice to affiliated retailers. These services include merchandising ideas and programs, pricing policies and strategies, product mix suggestions, store employee training, order processing, grading, storing and transporting, and inventory and capital equipment financing. To the extent necessary, the government or autonomous agency administering the loan program should work with the wholesaler to develop and provide these management skills and services.

Since we are especially concerned with the development of urban food marketing to aid low and middle income consumers, credit should be given only to chains servicing these areas. However, these chains should also service upper income areas. The approach is to mix the volume and high profits of upper income outlets with the volume and lower unit profits of low and middle income outlets in order to achieve desired chain profits and public social benefits. Further, by mixing outlet types, the chain wholesalers can grade and sort by the demands of various income groups, thus considerably reducing spoilage of perishable products.

Fifth, we are concerned with the social costs of any reform program. A principal concern at the present moment in Latin America is the extent of urban unemployment. The retail food sector has always been viewed as an absorber of excess labor, with consequent reluctance on the part of officials to disturb the traditional system. In the simulations developed in the Cali study, our calculations indicated

that a modern system can operate with one-third the employment of a traditional system. Subsequent experience and recalculation suggest that significantly more labor would be needed--partly because we originally assumed complete self-service operations and now believe it necessary to continue clerk servicing at least for some products.

We now estimate that the more modern urban distribution system would probably employ from 1/2 to 2/3 of the labor used in a traditional system.

Because of the critical need to reduce real and disguised unemployment in developing countries, the urban market reform programs suggested here may be viewed as socially undesirable. We are aware of this problem, but feel that there are a variety of militating factors which must be considered. First, it is important to recognize that modernization of a major urban food system does not take place immediately. Furthermore, urban population and income growth is such as to require an increasing supply of food marketing services, largely offsetting the trend toward larger scale operations in modern food marketing. Thus, total employment in urban food distribution would probably not be reduced in absolute terms. In Puerto Rico, for example, employment in urban food distribution remained stable, even though a substantial urban marketing reform program had been in effect for more than 10 years and modern retailers had increased their market share to 50 percent of urban food sales.[22]

Second, the rapid entry-exit conditions in neighborhood store operations indicate these outlets by no means provide a stable employment base. Experience in Puerto Rico suggests that many may continue to survive comfortably as beverage parlors and convenience outlets for a limited line

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[22]See, Food Marketing in the Economic Development of Puerto Rico (Research Report #4, Latin American Studies Center, Michigan State University, East Lansing, Michigan), p. 280.

of staples. Our Colombian data show that many of the small neighborhood stores derive a high percentage of profits from beverage sales, and may therefore be expected to evolve as did their Puerto Rican counterparts when faced with the competition of modern retail outlets.

Third, any analysis of the direct employment effects of food marketing changes should be balanced against the following positive and dynamic effects: (1) a 6-8 percent reduction in food prices for the large numbers of urban people who spend over 50 percent of their incomes on food, (2) the positive effect of that food price reduction on effective demand for both food and nonfood items, (3) a reduction in product loss and spoilage, and (4) a reduction in marketing risks, providing farmers greater incentive to expand production.

Interestingly, overall investment for a modern food distribution system is less than that required by the traditional system to supply an equivalent sales volume. Traditional outlets are woefully inefficient in their use of capital, especially fixed capital. Indeed, capital equipment requirements of the suggested outlets will improve output and employment in the modern supplying industries, as opposed to the cottage industries now utilized for much of the equipment seen in neighborhood stores.

The approach presented above is, of course, subject to many variations. We suggest, however, that the theme is viable and a valuable input into the development process.

CHAPTER 4

AGRICULTURAL COMMODITY SUBSYSTEMS

In the previous chapter, we examined the major problems in food marketing at the urban consumer, wholesaler and retailer levels. We were concerned with the institutions and corresponding activities of final distribution of small quantities of a wide variety of products to urban consumers. In this chapter, we look more closely at supply channels in an effort to explain some of the market coordination problems for major groups of agricultural products and technical farm inputs. We are concerned with the production and accumulation of supplies of agricultural products for efficient shipment to wholesalers.

For analytical purposes, we have found it useful to focus on commodity subsystems defined as the entire set of activities performed in the production, assembly, processing, distribution and consumption of a single product.

Vertical coordination[1] of any commodity subsystem is accomplished through day-to-day decisions of a multitude of individual farmers, private intermediaries, cooperatives and public agencies. Most farmers and businessmen in developing countries have been heavily oriented toward traditional business methods. While those with more formal education tend to be more creative, their behavior is seldom much different from that of their less-educated counterparts. Furthermore, those who try innovative behavior often find themselves limited by scarce resources, resistance from suppliers or buyers, and a lack of expert advice. Often there are few feasible innovations open to individual small-scale marketing firms. Marketing margins may be relatively high, but labor, management and capital returns are often

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[1] For a definition of vertical coordination, see p. 27.

low because of low productivity and cost increasing strategies employed to cope with uncertainties.

The consequences of such traditionally coordinated commodity subsystems are high consumer food prices, relatively low and unstable farm prices, and less than efficient allocation of productive resources to meet society's needs and wants.

On the other hand, if the food system is well coordinated, consumers will receive a stable and adequate supply of nutritious food at a reasonable price. Prices will move up and down to reflect biologically based production patterns. Price differences between different locations in the market area will reflect actual differences in transfer costs. Seasonal price variations will bear a close relationship to storage costs or to seasonal differences in production and distribution costs. Price spreads between the same product at the farm level and the urban retail level will be closely related to actual costs of providing necessary marketing services. Returns to farmers would be sufficient to call forth the quantities and qualities of products that would satisfy aggregate consumer demands. And a market price that would clear the market without significant surplus or storage conditions would be established.

In order to create a favorable environment for improvements in commodity subsystem coordination, it is important for agricultural policy makers and commodity subsystem firms to better understand the interdependence of farmers and their marketing agents. In a very real sense, farmers and those who market their products are bound together in an often unrecognized partnership. The farmer depends on his buyer(s) to search out a market at a farm level price that will allow the farmer a fair profit. This buyer is similarly dependent on his own buyer, and so it goes through the market channel. Every handler of a given product lot is bound together, however informally, with all others who have handled the product in its movement toward the final

consumer. Thus, the profitability of each firm in the channel is significantly related to the effectiveness of its trading partners.

In recognition of this, different kinds of group actions can be taken to enhance the complementarity of the activities of different participants in the production-distribution marketing channel. Some examples of these group actions are: trade associations, farmer organizations, cooperatives, voluntary arrangements between firms at different levels in the market, contracting and vertical integration.

At the individual firm level, farmers and businessmen can be encouraged to better organize commercial relations with buyers and suppliers. The farmer or businessman may do this by simply providing better information and service, thereby assuring cooperation for his innovative schemes. He may use contractual arrangements. Or he may seek to vertically integrate with his suppliers or buyers through acquisition, merger or cooperative organization. These are all ways to improve coordination[2] in the food system, and thereby contribute to the development of a progressive and effectively competitive commodity production-distribution subsystem.

In a predominantly market economy with reasonably effective competition, short-term private benefits to individual entrepreneurs will be translated into long-term benefits to society. We can expect less successful firms to try to imitate the more successful firms.

Improved vertical coordination[3] reduces uncertainty,

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[2]See definitions on p. 27.

[3]By "improved vertical coordination," we mean such things as accurate and timely market information for all parties, better communication of consumer grade, quality, form and time preferences up the channel, verbal or written forward purchase agreements, improved storage arrangements at appropriate locations, improved physical handling and transport arrangements, and similar improvements in organization and operation of the marketing system.

enhances the opportunity for joint adoption of innovations requiring buyer and seller agreement, and should make it possible to pass some of these benefits on to consumers and producers.

On the other hand, certain factors can impede competition and prevent translation of short-term private benefits into long-term benefits to society. These include barriers to imitation, e.g., patents, licenses, legal or financial restraints, limitations on access to technology and managerial skills, collusion, etc. Improvements in vertical coordination necessary to improve market system performance tend to reduce the number of independent transactions in the marketing process. The benefits of improved market performance may remain in the hands of relatively few firms if vigorous and effective competition is not sustained. Government should promote effective competition.

Commodity Subsystem Analysis

Our approach to agricultural marketing system development has been to collect information and observations that will permit us to describe and diagnose the problems of vertical market coordination for major groups of agricultural commodities and technical farm inputs. We have sought to identify private and public opportunities for stimulating more effective vertical coordination and thereby improving the performance of the marketing system.

Our commodity subsystem studies have focused on somewhat different product groups in the different countries, reflecting relative economic importance in each case. In general, we have examined the following groups: (1) grains, (2) fruits and vegetables, (3) poultry and eggs, (4) milk, and (5) red meats.

In this section, we will examine the results of our agricultural input and commodity subsystem studies in Colombia with comparison to other countries where appropriate. Then, while recognizing the dangers of overgeneralization,

we will offer some conclusions regarding the major problems of agricultural market coordination in Latin America. The reader is referred to LAMP research reports for more detail.

Grains

We encountered more variability in grain market structure from one country to another than for any other commodity group. In fact, there is much variability from one region to another within the same country. There are fairly large, specialized commercial farmers selling to large assemblers, wholesalers or processors in some areas, while in other areas, small farmers sell marketable surpluses to small assemblers who may resell to larger assemblers or retailers in nearby market towns. These are what William O. Jones has called "big trade" and "small trade" in Africa.[4] The big trade appears to be performing relatively well, benefiting both large farmers and merchants. The small trade leaves much to be desired, especially from the small farmers' standpoint.

We found immense public concern for grain marketing. This probably stems from a belief that grains are an important item in the consumer food budget and thus a major concern in the agricultural economy. Our research indicates that while certain grains and grain-based products (corn, rice, beans, bread) are consumed regularly, they may not be as important in consumer food budgets as is often thought. In Cali, all grain and grain-based products accounted for less than 22 percent of consumer food expenditures, as compared to over 29 percent for red meats, 17 percent for fresh fruits and vegetables, and 16 percent for other processed foods. Public concern may also be a reflection of the fact that political leaders find it relatively easier to

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[4] W. O. Jones, Marketing Staple Food Crops in Tropical Africa, Cornell University Press, Ithaca, N.Y., 1972.

make an appearance of improvement in grain markets than for any other commodity group.

We encountered a major public institution charged with responsibility for helping stabilize agricultural markets and improve market system performance in every country. These institutions invariably focus heavily, if not exclusively, on grain markets. Their efforts usually center around some combination of grain import controls, minimum price supports, buffer stock management and wholesale or retail sales outlets (supposedly concentrated in low income areas). They are put in the difficult if not impossible position of being responsible for keeping farm prices high and stable while holding retail prices down.

Since most of our research has had a regional rather than a national market focus, we have not been able to fully examine such national policies. Our results have indicated, however, that many national grain marketing programs are not operating effectively and sometimes have negative effects on the market, while costing taxpayers large sums of money.

While we encountered significant structural variability in grain markets, the basic problems were remarkably similar from one country to another. These are standard problems long recognized as grain marketing problems in developing economies: (1) wide price variations between different markets and through time, (2) high physical losses, (3) lack of market price, supply and other decision-making information, (4) insufficient, poorly located and underutilized storage capacity, (5) lack of appropriate grades and standards, and (6) high-cost handling methods.

Identifying the problems is relatively simple. Understanding the reasons these problems are not being resolved and identifying workable ways to encourage private businessmen to start resolving them is more difficult.

Clearly, a major reason for continuation of traditional grain marketing practices is lack of marketing knowledge

on the part of individual farmers, intermediaries and government employees.

A second reason is lack of effective government programs. Many of the problems, such as grades, price information and roads, require positive public programs.

A third reason is that solutions to many of the problems require closely sequenced structural, institutional and behavioral changes among large numbers of farmers, marketing-distribution firms and maybe even consumers. The forces that could set that sequence of changes in motion are not present in traditional commodity marketing subsystems. In spite of large numbers of competing firms, ease of entry and exit and absence of collusion, there is little innovative competition. Farmers and intermediaries have fallen into a traditional behavior pattern; they have little knowledge of alternative marketing practices. They see no incentive to change, and so they are not competitively innovative. Potential demonstration effects are stifled by negative social attitudes toward intermediaries and high levels of business risk and uncertainty. These same factors deter those firms that might be in a position of sufficient economic and managerial power to impose structure and order in the commodity channel.

A fourth reason for continuation of traditional grain marketing practices is the lack of effectively organized wholesale-retail distribution in urban areas. To put it simply, atomistic urban market channels become clogged as a result of large numbers of costly individual transactions.

We believe that concerted and creative government efforts are needed to overcome these reasons for continuation of long recognized grain marketing problems. Traditional government grain marketing programs have not recognized these reasons for traditionality and dealt with them accordingly. Rather, the focus has been on government regulation of markets, price support programs, and often direct state intervention in markets through storage programs and

grain purchase and distribution. These programs may be needed under certain circumstances, but are apparently insufficient.

Fruits and Vegetables

The production-distribution subsystem for fruits and vegetables is more complex and probably more difficult to rationalize than subsystems for other major commodity groups. Fruits and vegetables are a large, heterogeneous group of products, including such diverse items as potatoes, tomatoes and papaya. Due to biological production characteristics, there are usually both seasonal and year-to-year variations in output associated with wide price fluctuations. Most fruits and vegetables are relatively perishable, and product losses in the marketing process are often substantial. These characteristics contribute to relatively high risks for both producers and intermediaries, and to rather complex production and distribution organizational problems.

While any single product in this group will not normally account for a very high percentage of consumer food expenditures, total fruit and vegetable purchases approach 25 percent of consumer expenditures.[5] Tuberous crops, e.g., yams, potatoes and manioc, as well as bananas, plantains, onions and tomatoes, are often dietary staples of all income groups in Latin American countries. And while such staple products are normally both price and income inelastic, there are many other fruit and vegetable products that are highly elastic, so, as a group, total consumption increases fairly rapidly as incomes rise and product prices decline.

The fruit and vegetable production-distribution system also deserves special emphasis because it is adapted to small scale agriculture and is labor intensive. Improvements in this area can help large numbers of producers, intermediaries, consumers and workers.

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[5]See Table 2.3.

Fruits and vegetables are usually produced by small farmers who manage little more than subsistence from their farms. Because farms are geographically scattered and produce extremely small quantities of any one commodity at one time, assembly costs are high. Because of uncertain markets and lack of resources and information, these small farmers have been slow to adopt practices that would increase product quality and output.

The marketing system for fruits and vegetables is also dominated by large numbers of small firms earning low returns but with high gross margins for services performed. The high gross margins result in part from the small lots handled and the perishability of low-quality products. Product quality varies widely because little attention is given to quality control in either production or distribution. Production and prices are highly variable due to variation in climate and the poor information network guiding production and marketing decisions.

Fruit and vegetable market channels usually include one or more levels of rural assemblers who may purchase at the farm and/or at periodic markets in small rural towns. They take the products to other towns or major cities for resale to wholesalers.

In both Cali and Recife, these assemblers usually purchase small quantities of several products on any given day. They sell in small quantities to wholesalers in centralized markets.[6] Centralization is important to efficient price formation, due to the large numbers of small traders and limited market information. Wholesalers sell extremely small quantities to many individual retailers.[7] Many of these retailers have traditionally been centrally

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[6]For example, average total daily volume per tomato assembler in the Cauca Valley was only about 200 kgs.

[7]Average total daily volume of tomato sales by wholesalers in the Cauca Valley was 50 kgs.

located in small individual stalls in publicly managed market facilities.

The historical justifications for such retail centralization were: (1) relatively small numbers of geographically concentrated consumers, (2) high perishability of unrefrigerated products, (3) low per capita consumption of fruits and vegetables, and (4) relatively large numbers of retailers with limited market information. These justifications do not necessarily hold in today's urban centers.

In the Cali study, we offered several suggestions for improving the fruit and vegetable production-distribution subsystem. We will briefly review these with the expectation that they will illustrate a useful approach to fruit and vegetable subsystem development in countries plagued by similar problems.

We recommended that an effort be made to identify production zones on the basis of soil, climate, altitude, proximity to market, etc., that would be appropriate for specialized production of certain fruits and vegetables. Simultaneous market studies would be needed to identify seasonal market prices, deficits, surpluses and potential demand expansion opportunities. Armed with this information, governmental agricultural agents could provide technical assistance to producer cooperatives, assemblers and wholesalers to help them develop more rationalized assembly, more reliable supplies and better product quality.

Contracting has been successful in improving supplies and productivity for processing vegetables, and has some promise as a technique for large integrated wholesalers for fresh produce. Significant coordination efficiencies can be achieved through stable purchase agreements between assemblers and the kind of modern wholesale-retail chains discussed in Chapter 3.

We suggested a supervised credit program for small fruit and vegetable farmers, designed to improve farm productivity, lower assembly and distribution costs, and encourage more stable seasonal price and production patterns.

These goals could be accomplished by: (1) requiring the adoption of practices known to improve output as a condition of a loan, (2) allocating credit for particular commodities according to zones in order to concentrate production, (3) requiring a minimum planting to increase the size of each sale, (4) varying the amount loaned on a commodity by season to encourage off-season production.

As part of this program, we recommended that fruit and vegetable specialists be added to the regional agricultural extension staff. Besides providing assistance in individual production and marketing, these specialists would help develop specialized cooperatives to help farmers market products and obtain proper technical inputs. The cooperatives would be easier to organize if production were concentrated through the credit program. The extension workers could also help work out arrangements between farmers' associations and larger wholesalers. Each could offer valuable services to the other. This would be possible only after some scale is developed among the fruit and vegetable wholesalers.

Finally, we recommended special facilities and assistance for establishing organized markets for fruits and vegetables at the Cali food wholesale center. Associated with this would be a government-operated market information system and government effort to develop practical and commercially acceptable grades and standards for selected fruits and vegetables. Government extension agents and farm credit supervisors would teach farmers, assemblers, wholesalers and retailers how to use the market information and product grades, encourage them to do so, and where possible use credit, government services and further technical assistance as incentives to encourage proper use of market information, grades and standards.

This total program would reduce assembly costs, increase employment opportunities and economic returns to farmers, and improve the quality of products for consumers.

It requires considerable coordination of effort among various government and private agencies. Rising consumer incomes, increased urbanization and growing world food markets suggest significant opportunities for development of food processing industries. But well coordinated systems must be developed to efficiently perform production, raw material procurement and product marketing activities. Because of the labor intensive nature of production, processing and marketing activities in the fruit and vegetable product subsystems, these efforts should produce significant employment opportunities as stabilized markets reduce prices and stimulate consumer demand or as export markets are tapped.

Poultry and Eggs

We conducted detailed diagnostic poultry and egg subsystem studies only in the Cali project and our Puerto Rican research. However, careful observation of the subsystems in Recife and Costa Rica indicates very similar marketing structures, behavior patterns and problems are prevalent in other Latin American countries.

As contrasted to fruits and vegetables, poultry and egg production is dominated by commercial operations using relatively modern methods. The marketing system also tends to be much more highly rationalized. Yet there is evidence of considerable potential for improvement in both production practices and market coordination. Problems include uneven product quality and some unreliable farm input supplies.

Poultry meat is a highly preferred food, with high income and price demand elasticities. Most urban markets in developing countries would purchase much higher quantities if lower prices could be achieved through improved production and distribution practices. Farm production studies have indicated substantial differences in production costs related to operation size.

Most poultry and egg production has already shifted

away from small, unintensively managed farm flocks to more specialized, intensively managed and increasingly large production units. In the Cauca Valley, our survey showed that well over two-thirds of the eggs and broilers were produced by units with more than 5,000 birds. And the trend was definitely toward larger producers because of apparent economies of size in production and distribution.

Marketing channels for poultry and eggs are quite uncomplicated. Most products go directly from producer to retailer. In some cases, producers or cooperatives own and manage specialized retail outlets in upper income areas or near public markets. Many producers sell directly to supermarkets or large, specialized retailers. A few larger producers also act as wholesalers. In Colombia, grading and packaging of eggs had just become an accepted practice.

A major problem in broiler marketing seemed to be the lack of adequate broiler processing facilities. There were 20 small plants in Cali, 10 of which did not have defeathering machines, water heaters or refrigeration. Not one of the 20 plants could utilize broiler byproducts. In none of the plants were the birds inspected by a certified veterinarian, and sanitation was at a low level.

Egg producers in the Cauca Valley have two associations. We recommended giving technical assistance to these associations to improve their merchandising practices, especially in the grading of eggs. A program should be developed in cooperation with the association to provide market and production information to help even out production. A national poultry commission representing different segments of the industry could also provide a useful coordinating mechanism.

Poultry meat quality and distribution costs in Cali could be reduced by building a modern processing plant. Our study indicated that such a plant is economically feasible. We recommended giving technical assistance to the producers to help them or another group organize to build such a

facility. The processing plant would not only reduce processing cost, but would also offer an opportunity to rationalize assembly and distribution. Farmers would benefit from an expanded market, and consumers would get a better quality product at a lower price.

Milk

Milk is a basic food product that enjoys a rather unique role in most food systems. It is widely recognized for its nutritional value in child feeding. However, because milk is highly perishable and is an excellent medium for the transmission of contagious diseases (e.g., tuberculosis and undulant fever), producers and handlers are usually subjected to considerable control by public health agencies. Consumer concern about milk prices frequently leads to controls more closely supervised and more politically sensitive than controls on other foods.

Consumers in Cali were allocating about 11 percent of their food budget for the purchase of milk and milk products. Fluid milk purchases alone accounted for 8 percent of the consumer food dollar. Although directly comparable data are not available, our evidence suggests that Recife (Brazil) consumers probably spent a similar percentage of their food budget on milk and milk products.

Table 4.1 shows total daily per capita consumption (fluid milk equivalent), broken down by product form at retail. Per capita consumption is slightly lower in Recife. While raw milk is the most important source of fluid milk in Cali, it is the least important in Recife. Similarly, powdered milk is the least important source of fluid milk in Cali and the most important in Recife.

In both cases, raw milk was the least expensive, pasteurized milk next, and powdered milk the most expensive. Powdered milk is the most hygienically safe and convenient form, while raw milk is often intentionally adulterated with water and infested with dangerous bacteria because of poor handling.

TABLE 4.1 DAILY PER CAPITA CONSUMPTION OF MILK (FLUID MILK EQUIVALENT) IN RECIFE, 1967, AND CALI, 1969.

Daily Per Capita Consumption	Cali, Colombia		Recife, Brazil	
	Liters	% of Total	Liters	% of Total
Raw Form	.087	53	.007	5
Pasteurized Form	.069	42	.039	30
Powdered Form	.009	5	.085	65
Total	.165	100	.131	100

Source: LAMP Colombia and Brazil Reports.

In both cities, less than one-half of the households had refrigerators. Thus, most consumers must either have daily delivery of fluid milk or use powdered milk. The historical response to this situation in Northeast Brazil has been the evolution of a large and fairly effective powdered milk processing and distribution network to serve cities like Recife. Much of the processing capacity is located in southern Brazil, where milk production costs are significantly lower than in the Northeast. On the other hand, because the major milk-producing regions in the Northeast are located at a distance of 50 to 100 miles, there has been little incentive for development of a raw milk assembly-home distribution system.

The opposite situation exists in Colombia's Cauca Valley, where raw milk assembly and distribution is normally performed by individuals owning small trucks. They make purchase arrangements with milk producers near the city. Milk is normally picked up once a day--early in the morning. It is handled without refrigeration in milk cans. The distributor develops a home and retail store delivery route in some sections of the city. Consumers bring their own containers out to the street to the distributor's truck. The entire process from milking to home delivery is performed using dangerously unsanitary but admittedly low cost handling practices. In Cali, there was evidence that

adulteration, often with unsanitary water, amounted to as much as 15 percent.

Powdered milk was manufactured from milk produced in relatively remote regions in both Colombia and Brazil. The manufacturer arranges for independent truckers to pick up milk once a day at each cooperating farm. Final product packaging and distribution costs are especially high. By the time powdered milk reaches the consumer, its fluid milk equivalent price is 50 to 100 percent higher than that for raw or pasteurized milk.

Many consumers seem to prefer pasteurized milk. Pasteurized milk sales have been on the rise in both cities. But price competition from raw milk distributors, along with poor management, especially in the Recife pasteurizing plant, retard development of pasteurized milk sales. There are two privately owned pasteurizing plants in Cali and one state owned plant in Recife.

Our diagnostic studies identified several common problems in milk production-distribution in the Cali and Recife milksheds. First, unsanitary handling methods and adulteration, especially among raw milk distributors and at the producer level, are a danger to consumer health. Second, milk supplies decline by 20-25 percent during the dry season when consumer demand peaks. Yet milk price control practices and pasteurizer purchase price policies do not permit higher prices as an incentive for farmers to expand output during the dry season. Finally, milk production per cow remains low because of poor dairy farm management.

Based on our research in Cali and Recife, as well as in Puerto Rico where similar milk marketing problems were faced in the 1950s, we believe the following recommendations could be applied in other Latin American cities if appropriately adjusted to fit local conditions.

Recommendations for improving the milk system include a major modification of milk market regulations. It is proposed that legislation be enacted permitting the

establishment of regional milk regulation authorities for major metropolitan milksheds. These authorities would be responsible for: (1) establishing a classified pricing plan for milk at the farm level with seasonal adjustments, (2) establishing maximum and/or minimum prices at various distribution levels, (3) establishment and enforcement of sanitation and quality control measures, (4) checking for accurate measurement and payment for milk, (5) encouragement of minimum cost assembly and distribution, and (6) consumer education on milk.

The classified pricing plan with seasonal adjustments would be an incentive to farmers for improved seasonal production patterns. Price regulation may be necessary, especially if all milk is pasteurized by only two or three competing firms. Differential prices should be set between milk delivered to the home and that purchased at the store, reflecting the cost of delivery. A sanitary code adjusted to the existing situation and effective enforcement are needed.

Several approaches could be taken to achieve the potential savings from rationalized assembly and distribution. In Cali, comparison between existing transportation patterns and a rationalized one indicated that kilometers traveled in milk assembly could be reduced from about 18,000 to less than 4,000. Additional cost savings would be possible by using larger trucks. A rationalized city delivery system could save more than one-fourth of the transport costs. These transportation adjustments would release more than 100 trucks for other uses.

One way to achieve the suggested improvements would be to require that all milk be pasteurized. The pasteurizers could then rationalize the assembly and distribution system. For example, the two existing pasteurizing firms could process all milk sold in Cali with only minor additions of equipment. Calculations of this alternative indicate that the average price of all milk could be reduced, but the

price would be higher than that for raw milk. Thus, a judgment would have to be made as to the value of a fully pasteurized milk system. If estimates of adulteration of raw milk are correct, it is possible that a fully pasteurized system would be cheaper than the present one.

As a second alternative, the milk marketing authority might help form a cooperative of either assembly truckers or farmers to operate the assembly system. A third alternative would be to make milk assembly a regulated utility, assigning routes and establishing rates and operating practices. Finally, the regional authority might simply assist in rationalization by offering information and encouragement to truckers.

These changes will benefit many different people in the system. Consumers will benefit from more stable supplies of a higher quality, more dependable product safe for consumption. Pasteurizing plants benefit from more stable supplies and increased milk sales. Producers can benefit from more stable markets and remunerative prices, enabling them to increase farm productivity and enhance product quality.

The market regulation will improve coordination and stability, which will open the way to efficient production and marketing practices not feasible under the present system. These include more intensive production with accompanying real cost reductions, twice-daily milking, bulk handling, farm refrigeration and less frequent pickups. The net result can be a more efficient and progressive production-distribution system supplying higher quality milk products at equal or lower real prices.

Red Meats

Our studies have not included complete red meat subsector studies. For various reasons, decisions were made to allocate research efforts toward other commodities and other institutional problems in the different countries,

even though red meats are usually the single most important category in consumer food budgets (27 percent in La Paz and 29 percent in Cali). We found that meat is an important part of all consumer diets, representing 27 percent of the food budget of the 20 percent of Cali families with lowest per capita incomes.

Meat is a highly perishable item. Most consumers (over 56 percent in Cali and Recife) have no home refrigeration facilities, but meat is a staple in most of their diets. Thus, the traditional meat distribution system has been a fresh meat system in which animals are slaughtered during the night, delivered unrefrigerated to retailers in the early morning, sold to consumers and often consumed the same day. While such a system leaves much to be desired from the standpoint of sanitation, movement to a chilled meat system will be costly and slow in coming.

After studying the urban portion of the meat system in Cali, which includes the selling of live animals to wholesalers, custom slaughter at the municipal slaughter plant, and urban meat distribution, we made the following conclusions and recommendations.

The existing meat system provides a minimum of consumer services and results in an unnecessarily low quality product. Improved services and quality could be provided at the same or lower costs. Pricing and transaction practices do not facilitate the transmission of consumer preferences through the system. Inadequate sanitation in meat handling endangers the health of consumers and reduces the meat's eating qualities.

The lower income areas of the city are very poorly served by the retail meat system. Wholesalers do not provide inexpensive distribution of the lower quality cuts demanded in these areas. And grade-price differentials do not encourage such distribution. Most retail stores are too small to justify efficient meat service. Meat is one of the few areas of the food system showing evidence of monopolistic

profits. Both the meat wholesaler and the meat stall operators of the central retail market plaza appear to obtain returns unjustified by the services performed. These returns are supported by apparent limitations on numbers of competitors or locational advantages.

Only a very small portion of the meat sold in Cali is refrigerated. Because of the low cost, we recommended continuation of the hot meat system with some modification. As more families can afford it, there will be an increasing demand for refrigerated meat. Restaurants and higher income families are now demanding higher quality cuts. Serving this demand would be facilitated by a refrigerated system and the promotion of wholesalers who would break carcasses to meet the specific needs of retailers and restaurants.

We recommended a $100,000 slaughter plant improvement program to provide equipment to improve efficiency and sanitation of operations, the addition of a 150 square meter chill room, and equipment for more complete utilization of byproducts. We recommended the installation of facilities for 5 to 15 meat wholesalers in the new central wholesale food market. Facilities would include refrigerated coolers. At the same time, our proposed development assistance activity for wholesalers and retailers would include technical assistance and credit to establish meat as part of the operation of full-service wholesalers and in the larger neighborhood stores. Special training in meat cutting and merchandising should be provided.

The retail store operating budgets indicate that efficient meat departments are feasible in neighborhood stores. It is especially important to get low price meat services into stores in the low income areas. Pre-feasibility studies also indicate operations of a small number of larger specialized meat stores would be profitable and could reduce consumer prices if placed in strategic locations.

We recommended that sanitary codes be modified to require health examinations by meat handlers, and that

considerably more resources be spent on enforcing existing regulations, including weights and measures.

A special problem relates to meat brought into Cali from slaughter plants in surrounding municipios (forranea meat). Currently, 20 percent of the meat is from these outside sources. Much of this meat is from animals slaughtered without veterinary inspection and could be a serious health hazard. We recommended that improvements in the Cali meat system be encouraged to reduce the incentive to bring in the forranea meat.

The smaller surrounding cities that supply this meat apparently cannot afford veterinary services. They maintain their slaughter plants as a necessary source of local government revenue. We suggested that arrangements providing comparable revenue to them for animals slaughtered in the Cali slaughter plant and shipped to their cities be considered. This would provide them with inspected meat, reduce Cali's source of uninspected meat, and very likely reduce costs by achieving economies of scale in slaughtering.

Technical Farm Input Markets

Improvements in agricultural productivity are dependent on simultaneous fulfillment of several conditions. Farmers must have reasonable expectation of a remunerative market outlet, have access to new and more productive technologies and the physical inputs (land, labor, capital goods) needed to produce under more efficient arrangements, and they must have access, through savings or credit, to the capital needed to finance additional physical inputs.

The dynamics of the shift from a traditional agricultural economy to a modern industrial one is perhaps characterized more by the substitution of technical farm inputs for traditional ones than by any other single factor. We have defined technical farm inputs as factors used in farm production, produced or modified off the farm, and resulting from scientific or technical achievement. The effective

integration or coordination of these specialized activities within the food system is critical to development.

Distribution of the following technical farm inputs was examined in both the Colombia and Northeast Brazil studies: improved seeds, fertilizers, pesticides and farm machinery. In addition, feed concentrate markets were examined in the Colombian study.

In general, we found technical farm inputs to be much more readily available for farm use in the Cauca Valley of Colombia than in Northeast Brazil. This may be partly due to the pioneering efforts of the Caja Agraria (Agricultural Credit Bank), which began distributing agricultural inputs through its own farm supply stores many years ago. In 1969, the Caja Agraria had over 600 farm supply centers scattered through Colombia's agricultural areas. In addition, it has its own facilities for producing, treating and distributing improved seeds. It also imports and formulates mixed fertilizers and pesticides. Finally, it imports and distributes farm machinery.

The Caja Agraria is by no means the Cauca Valley's only distributor of technical farm inputs. We found six other firms or cooperatives producing improved seeds, about six fertilizer importers and producers, sixteen other pesticide formulators, and several importers and national manufacturers of agricultural machinery. Several farmer cooperatives operate farm supply stores in the Cauca Valley, and privately owned farm supply stores are common in the major trading centers. Consequently, many technical farm inputs are commonly used by Cauca Valley farmers.

Much progress is evident in making technical farm inputs available in most trading centers in the Cauca Valley, but significant problems remain to be resolved. Research on economical combinations of technical farm inputs is lacking. There is evidence that farmers are not receiving adequate instruction on application rates for seeds, fertilizers and pesticides, resulting in both over- and under-application.

Both are costly.

Because of inventory control, transport management, and order procedure problems, input distributors frequently find themselves out of critical items at crucial periods, while being overstocked on other items. This raises distribution costs and forces farmers to find alternative distributors, substitute products or stop using the input altogether. The problem of not having the appropriate product at hand can be a serious one in view of the fact that modern inputs (fertilizers, improved seeds, pesticides) are highly complementary.

Pesticides were the only technical farm inputs readily available in the agricultural trading centers of northeast Brazil. There were few specially adapted seed varieties or hybrids available for distribution. Fertilizers were available only in selected areas for crops dominated by larger-scale farming operations, e.g., rice (in some areas), sugar cane and cotton plantations. Little farm machinery other than traditional hand tools was available. A review of price relationships indicated that most technical farm inputs were not profitable under existing farm practices. But the limited market distribution of such inputs in the area is partly responsible for high input prices, since production facilities are not fully utilized and low volume distributors must spread the burden of fixed marketing costs over the relatively few units sold. Our suggested solution to this dilemma was to step up research and extension efforts to identify and inform farmers of profitable conditions for using farm inputs. It was suggested that special emphasis be given to fertilizer and improved seeds.

A Summary of Agricultural Market Coordination Problems in Latin America

We have observed seven categories of marketing problems in each of the countries where we have conducted commodity subsystem studies. These factors keep rural marketing costs

and coordination uncertainties high.

First, we observed a relative lack of regional specialization and relatively small-scale farming units in production of individual commodities. There is a tendency for farmers (especially risk sensitive small farmers) to produce several products, often in small quantities. This is a special problem in milk and fruit and vegetable production, and results in small production quantities scattered over fairly large geographic areas with subsequent high assembly costs.

Either the farmer or a specialized assembler must expend time and effort to transport and sell these small quantities. Per-unit marketing costs are high. In addition, production costs are often higher than they might be if each farmer specialized in a few farm enterprises best suited to his soil, climate, and managerial skills. But under prevailing conditions of limited market information, unstable prices and uncertain markets, plus weather uncertainties, a farmer's enterprise diversification is probably rational behavior. Individual farmers, except for those who are very large and well financed, can do very little about the uncertainties that force them to diversity.

Second, partly as a result of the lack of geographical concentration of agricultural production, there are frequently very few rural traders available to purchase an individual farmer's produce. The result is some tendency toward spatial monopsonies or oligopsonies in assembly markets. Standard economic theory would suggest the possibility of monopsonistic and collusive pricing behavior resulting in low farm prices and high intermediary profits. Yet in these assembly markets we found few artificial barriers to entry and little evidence of excessive monopsonistic profits. The trader is caught in a situation of great uncertainty and risk. He sells on a very uncertain market and must somehow be compensated for this risk. That, coupled with inefficient management practices, makes it necessary for the assembler to collect large

gross marketing margins.

Third, there is an overwhelming prevalence of crude and inefficient handling, packaging, storage and product preservation practices and little product grading. Product shipments leaving the farm often include overripe and damaged products, as well as stalks, stems, rocks and other foreign material. The results are high spoilage, high transport and handling costs, high transaction costs due to required personal inspection, and unattractive, unappealing merchandise in retail stores.

Once again, the individual farmer finds it difficult, acting alone, to do much about these problems. At a minimum, he must have cooperation from the buyer, who must have cooperation from the wholesaler, who must have cooperation from the retailer, who must convince the consumer that his products are a better value. To resolve these problems at each point in the channel, the buyer must be able to accept and appreciate the value (for him) of the improved package, transportation, handling or other innovation. The system can only perform more efficiently in total as large numbers of market participants understand innovation opportunities and agree to pursue them together. This requires attitude change and education.

Fourth, price distortions and uncertainties are always a problem and are sometimes ruinous. Markets are "thin." Stocks are limited. Government programs designed to stabilize prices are often mismanaged, thus accentuating fluctuations and instabilities. Antispeculation laws and price controls discourage or prevent intermediaries from maintaining stocks and rationing supplies according to seasonal needs. In the absence of publicly financed market information, only the larger volume traders can afford to maintain private market intelligence systems. And even the presence of these private intelligence systems does not prevent distorted price relationships through time and space. Of course, the small trader or farmer with poor information

is at a relative disadvantage in the exchange negotiations.

Fifth, there is a shortage of both short- and long-term credit for financing commercial activities at reasonable interest rates. In most countries, the capital market is heavily regulated. Government policies direct the bulk of credit resources to industry, agriculture and exports. Credit left for national food distribution activities is quickly absorbed by a few large, financially sound firms. Hence, most credit for financing market flows must be provided through equity capital by individual farmers and traders, or borrowed, usually at exhorbitant interest rates, from financial institutions or private money lenders.

It is normally argued that scarce credit resources should not be used to finance product inventories (except occasionally for farmers or processors). Similarly, it is argued that short-term investment capital in the marketing system should be provided out of owner equity capital. But traditional ordering of credit priorities, which placed national food distributors at the bottom of the list, is not defensible when the food system is indeed a transformation process whereby land, labor and capital resources are combined[8] to satisfy the form, time, place and possession utility demands of people in the economy.

Credit for purchasing agricultural or industrial inputs is not innately more productive than a comparable allocation of credit to marketing activities. Credit for the purchase of seed and fertilizer is indeed "inventory financing." The inventory is simply attached to the soil and, subject to some risk, will eventually be converted to a marketable product. The artificial distinctions between agriculture, industry and commerce are meaningless. And there is no rationale for allocating resources first to one

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[8] In reality, the process involves various combinations of basic and intermediate inputs, such as improved seeds, fertilizers, transportation equipment, processing equipment, packaging, storage facilities, handling equipment, etc.

or the other. Resources should instead be allocated to those production and/or distribution activities that most efficiently satisfy society's form, time, place and possession utility demands.

Sixth is a pervading failure of the traditional assembly trader to perform the communications function linking the farmer to potential markets. The trader is typically a passive agent in the marketing channel accepting whatever happens to be produced. The traditional trader does not anticipate markets. He does not offer contracts linking planting decisions with future market needs. He does not develop markets for those commodities that are potentially available. Thus, he does not act as an agent for effective coordination and change in the production-distribution system.

The seventh category of commodity subsystem problems is the traditional physical facilities bias inherent in most development planning. It is relatively easy to generate enthusiasm for a $50 million project to build a network of publicly owned storage facilities, but hardly anyone is interested in a $2 million supervised credit and training program designed to improve managerial competence among marketing cooperatives and private intermediaries. And it is even harder to find support for applied marketing research designed to produce a diagnostic evaluation of marketing system problems and to devise and implement action programs stimulating market coordination improvements.

In the next chapter, we will bring together some of our major conclusions on production-distribution system development and present a framework for stimulating improvements in market coordination and performance.

CHAPTER 5

PLANNING FOOD MARKETING SYSTEM DEVELOPMENT

In the preceding chapters we reviewed general economic and social conditions, urban marketing issues and major commodity subsystem organization in the three areas where extensive LAMP marketing research work has been focused over the past 10 years. In addition, where applicable, we have drawn on our work in Puerto Rico, Bogota, Colombia and Costa Rica. In this chapter, we first briefly review our major conclusions. This will serve as a background for the remainder of the chapter, where we present an approach to market system development planning.

A Review of Conclusions

Economic and Social Conditions

1. Perhaps the most pervasive and troublesome general condition in Latin American countries (and the entire developing world) is the rapid rate of population growth. The current population growth rate of 3 percent for many countries produces a doubling of the population every 24 years. Accompanying this high rate of growth is a rapid migration from rural to urban areas. Population growth rates of 5-7 percent per year are common in Latin American cities. These two population related conditions are obviously producing great pressures on the food marketing system.
2. There is a relatively high concentration of wealth, income and political power in most Latin American countries. Poor people (both rural and urban) make up the bulk of the population. In urban areas, 50 to 70 percent of their income is expended for food. Labor productivity is low due to nutritional and educational deficiencies. Unemployment rates are high (10-30 percent). Employment opportunities are limited by cultural and institutional constraints that tend to perpetuate the concentration of

wealth. Consequently, demand for goods and services is limited, markets are narrow, and human and natural resources go underutilized.

3. Production and distribution costs for both food and non-food products are high, reflecting traditional management practices, high risk and uncertainty costs and poor market coordination. Prices paid by rural and urban consumers are therefore high as compared to disposable incomes--especially for the lowest income groups. Small farmer and landless laborer incomes remain low.

Market Related Conditions

1. Except for traditional export crops there is insufficient geographic and firm specialization in the production of many basic food commodities. Consequently, production of a given product may be scattered over a fairly large geographical area. The effects of this geographical dispersion are several. First, the farmer may not be specialized in the production of those crops best adapted to his soil and climate. Second, the problem of assembling the marketable surplus is made more complicated and costly. Third, the marketable surplus in any area manageable by an intermediary may be so small as to preclude his providing specialized marketing services. Fourth, since the small market volumes in many areas can support few traders, the structure of the local market may be monopsonistic or oligopsonistic.
2. On the distribution or dispersion side of the market channel, food wholesalers and retailers tend to be excessively specialized in relatively few products. This is their strategy for coping with the small product lots, lack of market information, personal inspection requirements, lack of routinized procurement arrangements and the risk and uncertainty so prevalent in distribution channels. The merchant's reasoning is that the fewer products handled the greater his chances of

"staying on top" of the complicated market for each of those few products. This may prevent him from taking advantage of certain natural product complementarities. It implies that retailers and consumers must incur additional costs (in time and/or money) to procure the desired product assortment from several specialized merchants.

3. Because of the existing nature of product market channels, individual farmers and middlemen find it difficult to establish stable routinized sales and supply channels. Longer term planning is extremely difficult. The rate of business failure is high, leading to maintenance of traditional management practices and strategies. Innovations such as grading, handling and packaging improvements could improve overall efficiency, but they go unadopted either because individual firms are unable to capture sufficient benefits to make adoption worthwhile, or because of the fear of business failure. Case studies suggest that such innovations are adopted where product market channels are blessed with a financially strong, innovative institution (e.g., a cooperative, a wholesaler, a retailer or a processor) that can provide strong channel leadership.
4. Under existing market structure and practices, transaction costs are high. Lack of standard weights, measures and grades inhibits the flow of meaningful information, forcing traders to personally inspect each lot. Under such circumstances, marketing firms are unable to routinize procurement and sales arrangements and thereby reduce transaction time and costs.
5. Physical handling costs are high as a result of the current necessity to individually negotiate, handle and transport small quantities of product throughout the marketing system. High handling costs also result from inefficient work methods, poor transportation scheduling, inefficient inventory management, improperly designed

and poorly managed physical market facilities, inadequate and inefficient product packaging and high levels of product theft and spoilage. These are management shortcomings perpetuated by the lack of well-trained marketing experts who could provide the analysis and innovative ideas needed to change marketing practices and reduce handling costs.

6. There is a lack of dynamic, innovative and effectively competitive economic activity. The structural conditions for competitive markets are generally fulfilled. There are large numbers of small competing firms, intermediary profits are often less than the minimum wage, and there are no substantial barriers to entry and exit. Yet these competitive pressures do not result in improved efficiency and better management practices by surviving firms. Rather, they result in increasingly conservative business practices.

Government-Related Conditions

1. The basic position of most Latin American governments is that marketing firms are at best a necessary evil. Consequently, there is little inclination to assist or encourage marketing firms. Public laws and programs are designed to regulate or control middlemen rather than to attempt to change their undesirable traits through education, technical assistance and economic incentives.
2. Public programs to facilitate marketing system efficiency are often either completely absent or ineffectively instituted and managed. The reference here is to such things as market information, standard measures, grades, marketing research, education and facilitative regulations.
3. Credit is normally channeled first to what is called agricultural and industrial production activites. Marketing firms are expected to finance their activities

with equity capital, borrowings from private money lenders or in some cases with leftover bank credit. Consequently, innovative marketing firms often encounter extreme difficulty in obtaining the relatively small amounts of capital required to implement their performance improving ideas. Marketing is not and should not in the immediate future become a highly capital intensive activity. But that should not (as it often does) obscure the reality that marketing firms seeking to provide services more efficiently may require short-term credit (1 to 2 years) for expansion of inventories and medium-term credit (3 to 5 years) for capital equipment. And, as is so often the case in developing economies, the more innovative entrepreneurs lack sufficient equity capital to implement the desired marketing improvements.

4. There is a severe shortage in most Latin American governments of personnel with appropriate technical expertise on marketing issues. Private firms, both national and multinational, are the major repositories of marketing expertise. That expertise is highly oriented toward understanding how to maximize profits of those types of individual firms. The limited marketing expertise present in governmental agencies is heavily oriented toward macro marketing or economic policy issues. Consequently, government policies are devised without benefit of detailed knowledge of micro marketing problems and opportunities.

5. There is a strong tendency to place too much importance on providing physical "marketing" facilities. This tendency is often due to the perceived political necessity of putting the taxpayers' money into things that are highly visible and durable. This bias is sometimes complemented by the foreign advisor's tendency to duplicate physical facilities from more advanced countries without adaptation to the local environment. Here is an example. A few years ago, one of the Latin American

countries obtained a loan from an international lender for the purpose of building a grain storage network costing several million dollars. The project design was based almost exclusively on a macro market analysis. It took into account present and projected grain demand, regional production totals, regional surpluses and deficits, imports and exports, regional price differentials and similar macro economic statistics. But it did not effectively consider issues such as characteristics and problems of the marketing institutions handling the grain (including farmers) and their need for or willingness to use the proposed storage facilities, the firm level precedent conditions for effective use of the facilities, or the availability of a competent public institution with personnel to manage the facilities. The network is operating at much less than 50 percent of capacity and is losing money.

The Role of Government in Market System Development

With the exception of the pure subsistence economy, the coordination of economic exchange must be performed in every economic system. Coordination of economic activity involves three mechanisms: (1) the market processes linking activities among individuals and firms through exchange and prices, (2) administrative coordination linking activities within firms or government organizations and (3) the rules of the game, specified by the political and social system, that regulate market processes and administrative decisions. No markets are free of rules. Social and political forces largely determine the relative importance of these three coordinating mechanisms for a given country at a given point in time.

The cultural and political heritage of Latin America has left a predominantly market exchange system in most countries. In recent years, however, a growing interest in planned development has resulted in administrative mechanisms

being instituted to supplement or replace free markets. It is argued (sometimes erroneously on the basis of untested conventional wisdom) that due to poor market information, market concentration and other market imperfections, private firms are able to extract monopoly profits. The oft advanced solutions are price and margin controls, antispeculation laws and, ultimately, nationalization. While all of these measures may be appropriate under certain circumstances, they can also make matters worse if applied indiscriminately. Consequently, there is a real need for developing countries to indigenously develop the analytical capacity and information base needed to evaluate policy decisions on economic coordination. Some of the difficult policy issues that must be carefully analyzed are discussed below.

Perhaps the most important marketing policy issue has to do with food prices. Farmers prefer high prices for their products, while consumers want low food prices. Government operated farm price support programs are constrained on the one hand by the need to establish a level of prices that will call forth the production required to satisfy consumer requirements, while on the other hand attempting to avoid creating burdensome surpluses and artificially high prices for consumers. Less developed countries are hardly able to provide income transferral price policies favoring farmers. And the benefits of price supports are usually proportional to the size of land holdings. Hence, careful economic analysis should be available to guide policy makers in the establishment of farm product price support levels.

Retail food price controls pose similar problems. If prices are set too low, production will be discouraged and consumers will be faced with product shortages. The extent and nature of resulting market distortions need to be weighed against possible benefits of price fixing schemes as a means of constraining inflationary pressures or guaranteeing minimum prices to farmers. Effective price policy analysis requires a fairly sophisticated level of knowledge

about market organization and behavior as well as economic analysis.

A second marketing policy issue is related to public sector intervention in food distribution activities. There are wide differences of opinion concerning the extent to which the government should directly intervene in the actual buying and selling of commodities and thus take on the function of intermediaries. Although private sector intermediaries continue to be the central core of the food marketing systems in Latin American countries, there is a trend toward increasing government intervention.

When products become scarce and prices rise, consumer interests accuse the intermediary of speculation. When products are in abundant supply and prices are low, producer interests accuse the intermediary of using market power to increase marketing margins and thus worsen the farmers' income situation. Political leaders are therefore attracted to highly visible interventions in food marketing that will allegedly eliminate the lecherous middleman or at least force him to charge lower prices for his services. Before instituting such programs, careful analysis is needed to determine whether private intermediaries are indeed operating with unreasonable inefficiencies or exorbitant profits and to evaluate the possibilities of instituting a public bureaucracy with the administrative capacity and institutional flexibility to do any better. The effect of public intervention on private sector investment in food marketing should also be contemplated. If subsidies are involved, the net effect may be to discourage private sector investments, thereby reducing competition and slowing down the spread of more efficient methods of food distribution.

Should government stimulate improvements in marketing efficiency? If so, what kinds of changes should be encouraged? Food marketing activities are normally quite labor intensive. Proposed improvements in marketing facilities and institutions must therefore be carefully scrutinized to

determine their effects on employment. The concern over employment effects has been elevated in relative importance in recent years by the rising levels of unemployment and underemployment of human resources in developing countries.

If food marketing costs are to be reduced, it stands to reason that one of the major areas for cost reduction is in improving efficiency of labor utilization. This can be accomplished in various ways. The adoption of improved physical handling methods can reduce labor requirments. Investments in better designed and larger scale marketing facilities and materials handling and processing equipment may also reduce labor costs and aggregate marketing costs. When marketing technology options are being considered by private enterprise, the decision will be made on the basis of the internal costs and returns to the firm. But public officials considering marketing improvement policies and programs must take into account external effects, of which the disemployment effect looms large. This same basic policy issue is, of course, involved in decisions regarding investments in new technologies in farming and industrial production processes. Hence, marketing improvements are not a special case. And the relative importance of the disemployment effects must be weighed against potential benefits. Furthermore, longer run national development goals usually include several dimensions, not the least of which is increasing resource productivity as a means of achieving higher income levels. Thus, the goal of reducing unemployment can be pursued concurrently with the goal of increasing resource productivity.

A fourth policy issue is related to the kinds of regulative and facilitative actions government can take in an effort to stimulate improvements in market performance. Such public actions might include: (1) improving access to and use of credit, (2) establishing protection for property rights, (3) assuring fair exchange rules, protecting both buyer and seller, (4) providing or encouraging

services such as special education, basic research, market information, transport, storage and other marketing infrastructure through tax or credit policies, (5) searching out and encouraging alternative institutional arrangements for accomplishing effective vertical market coordination (e.g., partnerships, limited partnerships, private corporations, mixed economy corporations, cooperatives, marketing boards, autonomous government-owned corporations, etc.).

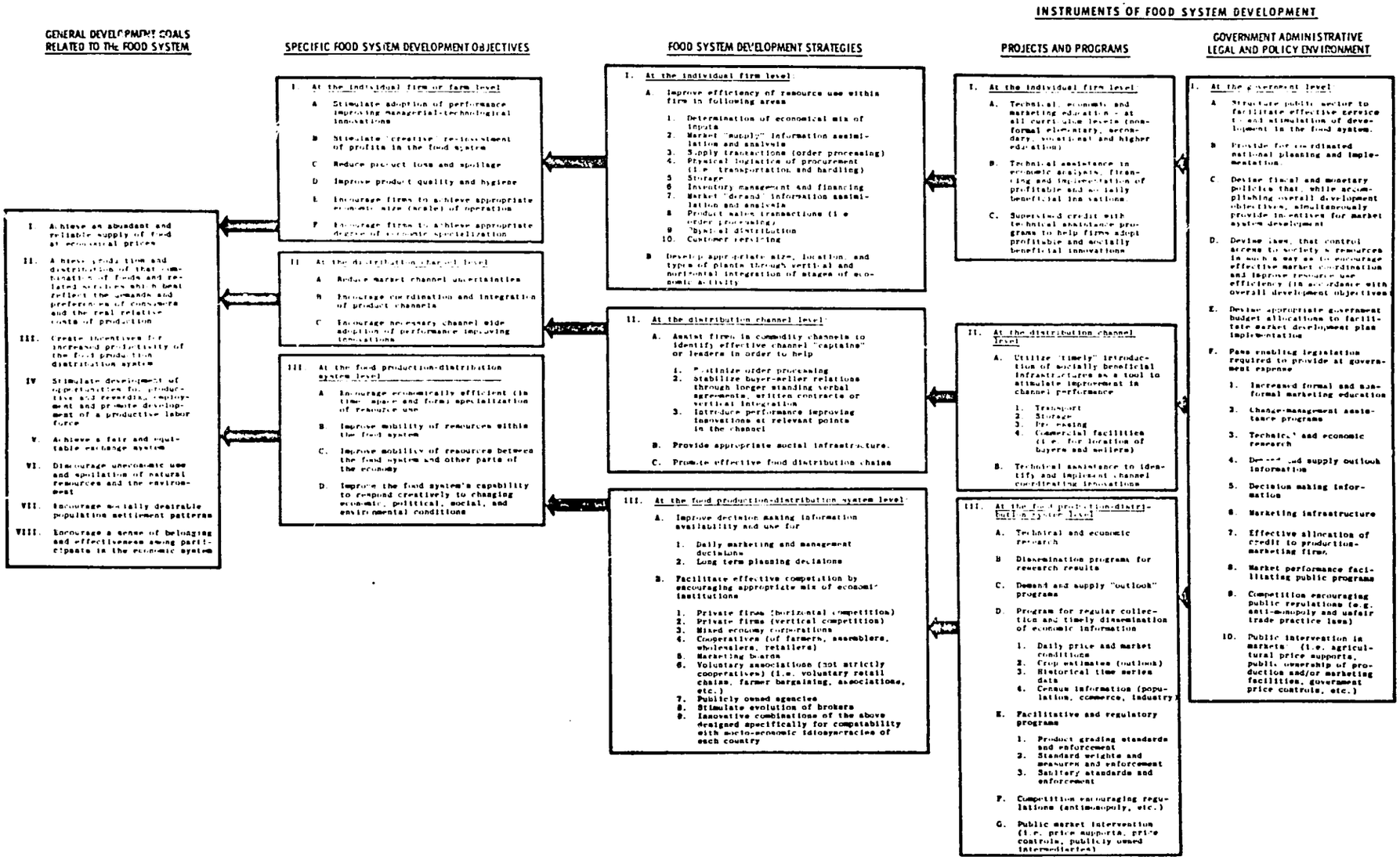
Most developing countries have no effective strategy for dealing with these important market related policy issues. Government actions are usually based on conventional wisdom rather than scientific knowledge about the marketing system. As a consequence, government policies and programs often have little positive effect or, worse, may have a negative effect on the performance of the food production-distribution system.

We believe that developing country governments can and should strive to formulate long-range national programs for improving food marketing system performance. Such long-range programs will, however, require investment to develop the knowledge base and the analytical capacity to assure realistic analysis of difficult policy issues and to formulate effective government regulations, policies and programs.

A Framework for Stimulating Marketing System Development

Figure 5.1 snows what we perceive to be the appropriate steps in formulating a government program of food marketing system development. Moving horizontally across the page from left to right, these steps are (1) formulation of general development goals, (2) preparation of specific food production-distribution system development objectives, (3) articulation of food production-distribution system development strategies, and (4) specification of program, project and policy instruments to be used in food production-distribution system development.

Figure 5.1 A Framework for Public Stimulation and Coordination of Food Production-Distribution System Development.



We might have added an additional step between Steps 2 and 3. This step could be called "diagnosis of major problems." But we prefer to include it as an integral part of the process of strategy formulation (Step 3). Hence, the first phase of strategy formulation should be to scientifically and systematically describe and analyze the current marketing system to identify major problems and opportunities.

In Chapter Six, we will offer more detail on the application of this framework for stimulating food production-distribution system development. In the remainder of this chapter, we will explain the rationale for the framework more fully. We will use Figure 5.1 to illustrate the kinds of objectives, strategies, programs, projects and legal measures governments can use to improve food production-distribution system performance.

We have identified three levels in the system at which development must take place: (1) firm or farm level, (2) distribution channel level, and (3) food production-distribution system level.

Specific actions must, of course, be taken by individual entrepreneurs at the firm level. We are concerned with the economic efficiency and effectiveness of individual firms as the basic building blocks of the economic exchange system. Their individual performance in terms of both cost effectiveness and meeting consumer needs is a major determinant of economic development.

A distribution channel consists of a set of institutions that handle a product or group of products from production to consumption. The focus is on the interrelationships of firms bound together, either tightly or loosely, by a common objective--servicing consumer demand at a profit. At one extreme, a completely integrated channel would consist of a firm that produces, processes, transports and distributes product(s) from the farm to the consumer under single ownership. At the other extreme, a variety of

independently owned firms would produce, process, assemble, transport and distribute product(s) from the farm to the consumer. These independent firms may be bound together in a variety of exchange arrangements that coordinate their activity over a substantial period of time.

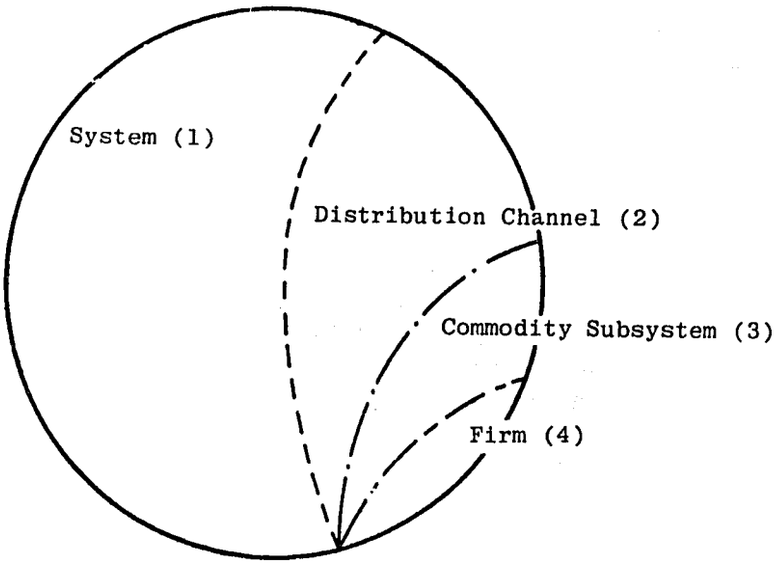
In our view, a distribution channel is concerned with moving a "package" of goods that are meaningful in terms of the buying patterns of final and intermediate customers. Thus, a retailer will carry a wider line than a country assembler. An assembler provides a part of the final package to a wholesaler, who in turn may provide all or part of the final package to the retailer. In an integrated or closely coordinated channel, each channel member is a provider and recipient of information flows, management techniques, credit arrangements and physical distribution practices, in addition to pure product flows. Thus, the channel members work together and obtain a synergistic effect from their relationship.

In Chapter Three, we focused on the institutional components of the distribution system that perform the final marketing functions for groups of food products, i.e., consumers, retailers and wholesalers. And in Chapter Four we focused on commodity subsystems--that part of the distribution channel involving the production, distribution and consumption of a single commodity.

The term "food production-distribution system" refers to the highest level of aggregation with which we are concerned, the interrelationships of all institutions involved in market-related activity. Individual firms, commodity subsystems and distribution channels are major elements in this aggregation. In addition, the important elements of laws and regulations and government policies and programs are added to the previous levels of aggregation to provide the environmental umbrella under which private and public firms operate.

Perhaps the paradigm in Figure 5.2 will help to

FIGURE 5.2 RELATIONSHIPS IN THE FOOD PRODUCTION-DISTRIBUTION SYSTEM



(1) Production-distribution system including all food products.
(2) Distribution channel for package "A" of food products.
(3) Commodity subsystem for single product X.
(4) Individual firm performing one or more of the necessary functions in a commodity subsystem.

clarify this conceptualization of the total food production-distribution system.

We believe that governments can effectively stimulate improvements in market performance and thereby generate production incentives, productivity improvements and dynamic growth in the food production-distribution-consumption system. Some mix of public actions directed at each of the levels described above is required. Also, some optimum

sequencing of actions and some optimum level of intensity for each government action are probably required. However, our level of understanding does not yet permit us to handle these last two issues with great precision. At this point, we have simply attempted to specify the sets of objectives, strategies and public instruments that might be used at each level in the system.

Before moving into a more detailed discussion of Figure 5.1, we should emphasize that to use this framework in a given country, it would be necessary for the implementing group to have a fairly extensive level of knowledge[1] about the interworkings of the food marketing system in that country. It would also be helpful if that group included individuals with basic training in managerial marketing as well as economic analysis. We have offered generalized and illustrative objectives, strategies and marketing development instruments. A diagnosis of the specific system in question would be necessary before applying this framework in a given situation.

In the remainder of this chapter we will refer continuously to various subparts of Figure 5.1 in an attempt to further explain the relationships. The reader is asked to refer back to the figure in order to follow this discussion.

At the Firm Level

We have identified seven specific firm level development objectives we believe to be important in stimulating development. Each specific country, region and commodity situation will probably require a different mix of emphasis on these firm level objectives.

Objectives A and B deal with the critical issue of

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[1]It is necessary to emphasize that by "knowledge" we are referring to an accumulation of scientific knowledge about the structure, behavior and performance of the production-distribution system. Conventional wisdom and folklore are not sufficient.

stimulating managerial and technological innovations now and in the future through continued creative reinvestment of profits. It is important to break the equilibirum of traditional management practices. That may require special strategies. And different strategies may be needed to keep the innovations coming and to induce firms to reinvest profits in future innovations.

The emphasis in objectives C and D is on reducing physical losses and improving product quality. In both cases, improvements in packaging and handling are important factors. But these improvements are not easy for individual firms to introduce without cooperation from other firms in the marketing channel. Improvement in these areas may also require action at the commodity subsystem level.

It is often thought that increased scale of operations is important at all stages of the channel. However, some evidence indicates that small farmers in labor abundant developing economies are just as efficient or more so than large scale farms.[2] Furthermore, the institution of large-scale retailers on the order of magnitude of U.S. supermarkets is inappropriate in many situations. On the other hand, our research shows that extremely small scale marketing firms, such as neighborhood stores and market stalls, often have significantly higher unit costs than larger scale retailers. Therefore, no simple generalization can be made regarding appropriate level of scale. As noted in objective E, judgment based on research and experience will be necessary to detemine policies toward firm size.

Objective F focuses on the important goal of seeking appropriate degrees of specialization in economic activities. A certain degree of geographic specialization in production activities is helpful in achieving greater land and labor productivity on the farm. It also helps reduce product assembly costs. In general, we have found that because

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[2]See Peter Dorner and Donald Kanel, "The Economic Case for Land Reform," AID Spring Review, June 1970.

of excessive diversification on farms in many developing regions, production and marketing costs are higher than they might be. On the other hand, there is generally excessive product specialization among food wholesalers and retailers, with subsequent high transaction and physical distribution costs in the channel. Both situations are a reflection of rational management in the face of high market uncertainties, limited managerial capacities and limited capacity to accept risks. Market system development strategies must therefore attack these issues through promotion of the appropriate degree of specialization at various points in the channel.

The suggested strategies for accomplishing these specific firm level objectives are grouped under two headings. The first focuses on functional economic efficiency, while the second suggests an emphasis on economic size and location of plants.

Strategy A deals with functional economic efficiency within the firm. We have listed some of the important activities where management improvements can be made. The list includes the kinds of things normally considered in business management. Perhaps the novelty here is that we have lumped farm and marketing firms together, suggesting that they have similar management needs. This reflects our earlier conclusion that "production" and "marketing" distinctions are unnecessary. We are suggesting that strategies for firm level development should give equal emphasis to improving economic efficiency in performing marketing functions as well as production functions. This development strategy helps accomplish firm specific objectives A through D.

In addition to the day-to-day management decisions mentioned in strategy A, each firm must make longer term planning decisions about the size, type and location of its future economic activities. If government wishes to achieve improvements in food system performance, it must have a strategy to encourage and assist private firms to make optimum

long term planning decisions. Strategy B deals with this issue and is designed to help accomplish firm level objectives E and F.

Moving on to consider specific governmental projects and programs that can be used to stimulate firms to achieve greater economic efficiencies, we suggest that existing programs be given a different emphasis. Again, in keeping with our view of food marketing system development, we are suggesting that the tools of formal education, extension education, credit and technical assistance be offered, without bias, to "production" and "marketing" firms alike.

We have separated technical assistance from extension education because we believe it is a separable function. Extension education programs are normally viewed as a kind of adult formal education. Adult formal education has an important place in development. But we define technical assistance to include nonformal educational situations where a more knowledgeable person informally transmits ideas, attitudes and methods to a less knowledgeable person. The input supply salesman is a good example of such a change agent. Similarly, the product assembler under the proper circumstances may be able to nonformally educate the farmer on certain market related matters.

In fact, every market participant becomes a potential change agent for someone else in the system. Credit agencies are a special example. Supervised credit programs recognize the potential value of combining credit with change management assistance. We visualize a situation where special public institutions would be charged with responsibility to not only provide technical assistance (management consulting services) for economic institutions but also to stimulate market participants to help each other. We believe this is the only effective way to get widespread diffusion of important managerial/technological innovations.

At the Distribution Channel Level

We have identified three specific development objectives for the distribution channel level. They deal basically with the important issues of market related uncertainties and externalities. The three objectives are closely intercorrelated (i.e., the fulfillment of one implies partial fulfillment of the other two).

Objective A deals with a reduction of channel risks and uncertainties, including: (1) variability in volume of supply or effective demand, (2) price level variations, (3) variable terms of trade and conditions of payment, and (4) uncertain product quality and assortment. Most of these uncertainties are a consequence of poorly coordinated market channels, which are a result of limited information, imperfect analysis and insufficient forward planning and forward purchasing.

Objective B recognizes the importance of externalities in the adoption of many managerial/technological innovations. Individual firms in a market channel may be reticent to adopt a given innovation if: (1) there is reason to believe sufficient benefits to cover adoption costs and yield some profit will not be captured by the innovating firm and/or (2) there is evidence that required acquiescence on the part of trading partners will not be forthcoming. An example is the adoption of a quality standard that would make personal inspection of each product lot unnecessary. Everyone in the channel could benefit from a satisfactory simple trading standard. But such a standard is economically feasible only if generally accepted. No individual in a traditional, fragmented system can adopt such a standard by his own action.

Another example is the adoption of shipping containers that save transport cost and reduce spoilage. The production, distribution and recycling of such containers involve substantial economies of scale. The savings in transport requires that all containers in a truck be uniform. Again,

the change generally must be made at the distribution channel level and is not something that can be adopted by any single participant. Somehow, relevant participants in the distribution channel must be stimulated by demonstration, competitive pressures and/or other incentives to sequentially adopt the innovation.

Objective C recognizes the importance of stabilizing market channel relations so that businesses can more effectively plan their individual development strategies. We have suggested that the objective should be to achieve more effective vertical coordination and integration of market channels.

The kinds of vertical coordination improvements discussed on page 58 in Chapter Four can have a number of very beneficial effects on the system. First, it may be possible to improve the bargaining power of weaker elements in the system. And firms with greater bargaining power can be encouraged to use it to achieve improved coordination through enlightened channel leadership. Second, transaction costs can be reduced by eliminating the need to collect information and negotiate a price for each transaction. Third, improved coordination may reduce physical distribution costs because stable market arrangements permit more efficient scheduling of transportation, handling, processing and storage facilities. Fourth, physical losses can be reduced. Improved coordination enhances the likelihood of channelwide acceptance of standard grades, packaging and handling methods. Fifth, improved coordination should reduce other unit operating costs by permitting more efficient use of fixed and working capital. Finally, improvements in channel coordination can reduce the costly uncertainties that force managers into excessive diversification or specialization and limit their capacity to adopt innovative practices.

The suggested strategies for achieving these objectives are to provide incentives through government action by: (1) encouraging respected (not necessarily economically

powerful) farmers and businessmen to adopt channel coordination improvements and (2) encouraging organization of effective food distribution chains at the wholesale-retail level. Under Strategy A, we have indicated some specific improvements which, if successfully adopted by channel leaders, will improve their profits and immediately produce imitation. The following is a crude formula for stimulating channel coordination improvements: special government incentives motivate a few firms to successfully adopt channel coordination improvements; this produces competitive pressures that induce other firms to try the improvements. Soon there is a genuine development spiral of innovation and counterinnovation in the food production-distribution system. The specific kinds of channel coordination improvements are: (1) routinized order processing (e.g., specification buying and telephone orders), (2) forward contractual agreements and/or vertical integration, and (3) sequential channel adoption of innovations in the performance of marketing functions.

Strategy B is based on a belief that physical facilities can have a significant effect on market performance in a dynamic context. That is, physical infrastructure such as roads and storage facilities may be used to stimulate management improvements, lower marketing costs and encourage a chain of management innovations that will continue to reduce marketing costs. But sequencing of physical facility projects is important.

Strategy C is to encourage the organization of coordinated chains of distribution at the wholesale-retail level. Experience in developed economies has indicated that close coordination between wholesalers and retailers can reduce distribution costs significantly and help stabilize agricultural markets. In Chapter Three, we discussed five types of wholesale-retail chains: (1) private chains, (2) retailer-owned cooperative chains, (3) voluntary chains, (4) consumer-owned cooperative chains, and (5) government-owned chains.

The three action instruments for implementing channel development strategies are: (1) "timely" introduction of necessary physical facilities, (2) technical assistance to potential innovators, and (3) direct government encouragement of appropriate wholesale-retail chains.

By "timely" introduction of food system projects, we mean the strategic planning of projects such as transport, storage, processing or other commercial facilities in order to use them as a wedge to help accomplish channel development strategies. For example, a wholesale market project forces channel participants to accept physical changes. This provides an excellent opportunity to motivate channel participants, through technical assistance, credit or training, to adopt complementary managerial/technological innovations. Evidence suggests that CORABASTOS, through design and operation of a new wholesale food market with related technical assistance programs, has produced significant changes toward improved market coordination in the Bogota, Colombia, foodshed.[3]

Direct government encouragement of appropriate wholesale-retail chains might be accomplished in several ways, depending on the local situation. It might include supervised credit and technical assistance to individuals or groups wishing to organize as private chains, retailer-owned cooperatives, voluntary chains or consumer cooperatives. It might be appropriate under some circumstances for government to actually own and operate wholesale retail chains.

At the Food System Level

The specific development objectives at the food system level relate to the more global and dynamic issues of

[3]An evaluation of the dynamic impact of CORABASTOS programs is currently being prepared by Alvaro Silva and Nelson Suarez. Contact the Corporacion de Abasticimientos de Bogota, Colombia, for further information.

resource use efficiency, factor mobility and progressiveness. The first objective deals with efficiency of resource use in the food system and should be a natural outcome if firm level and channel level objectives are fulfilled. The second and third deal with achieving mobility of resources within the food system and between the food system and other parts of the economy. The fourth deals with the food system's capacity to continually adapt itself innovatively and economically to changing economic, political, social and environmental conditions.

We have suggested three strategies for achieving these objectives. The first deals with effective information accumulation, analysis and dissemination. Private economic decisions, as well as public economic policy decisions, require information and analysis. By providing accurate and timely supply, demand and price information and analysis, government can contribute significantly to achieving food system development objectives.

Strategy B is related to the evolution of a combination of economic institutions that will ideally produce "effective" competition[4] at all levels (i.e., through time and space and at all points of exchange in product channels). If there is success in stimulating greater efficiency for food system firms, we can expect the more successful (efficient) firms to expand, creating a threat to effective competition. Opportunities for new entry must be kept open. Incentives are needed to encourage new firms with innovative institutional arrangements.

We should emphasize that cooperatives and publicly

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[4]While it is difficult to define "effective" competition, we are using it here in a very practical sense. It refers to a situation in which competing private businesses are constantly under some threat of losing profits and public institutions are threatened with reduced financial and manpower budgets that limits their capacity to fulfill institutional objectives. In this situation, there should be a pervasive drive among all firms and institutions to innovate, thereby improving both economic efficiency and service to the community.

held institutions are just as likely as private firms to adopt socially undesirable management behavior when they find themselves in a monopolistic situation. For that reason, we place great importance on a governmental strategy that encourages an effectively competitive mix of economic institutions. Many socialist countries are beginning to recognize that competition can be an important tool in development. We have listed some of the more common forms of economic institutions that have been used to accomplish development objectives. The appropriate mix for any country and any commodity channel will depend on the specific situation. We have, in fact, suggested in item 9 that it is often most appropriate to create innovative culture specific institutions using some combination or variation of the more common institutional patterns.

Suggested government actions associated with the above strategies are essentially the commonly proposed public projects and programs. Items A through D deal with information accumulation and dissemination. The necessary types of information programs are specified. Item E specifies the types of regulatory and facilitative programs government can provide to protect consumers and traders and also to help smooth the way for adoption of system improving innovations. Item F stresses the need for government regulation of competitive practices. A mechanism is necessary to permit the government to evaluate competitive practices of businesses and apply sanctions where appropriate. Finally, there is a provision for direct public intervention in the economic system where conditions warrant. This is always a possibility. In reality, experience shows that because of administrative problems, care should be taken in the use of these types of programs.

Legal, Administrative and Policy Environment

We have not yet discussed the items in the last column of Figure 5.1. No attempt has been made to classify these provisions according to the firm, distribution channel and

system implications. The effects of these kinds of legal issues are generally quite pervasive. Yet our entire framework for stimulating marketing system development through government action is dependent on enabling laws like those described in the last column of Figure 5.1. The performance of a given political system with respect to these kinds of issues gives us some response to the following questions: How serious is the country about promoting food production-distribution system development? And how far is the political system willing to go toward changing the traditional structure of things? The answer to these questions is found by reviewing the composite of laws, administrative decrees and policies in a given country and by testing the willingness to modify those that do not promote development.

To be sure, some inappropriate laws, decrees and policies are the result of misinformation or ignorance. But most are deliberately planned to protect some specific interest group. We are not oblivious to these realities. Nevertheless, we have listed some of the kinds of laws needed to provide the legal basis for the public actions implied at other points in the scheme. We have not attempted to specify related decrees and policies. Clearly, the effectiveness of public actions would depend heavily on the specific ways in which the laws were implemented.

We have begun at the highest order of legal issues. The first deals with the question of organization of the public sector's activities relating to the food production-distribution system. We have simply stated that, given specific political and cultural constraints, the public sector should be organized so as to efficiently stimulate development of the food system. Applying a systems approach, there is logic in the concept of a single governmental agency responsible for all public actions affecting the food production-distribution system. Unfortunately, most governments are divided along the traditional sector lines derived from national economic accounts (i.e., Ministries of

Agriculture, Industry, Commerce, etc.)

We question whether governments organized along sector lines are able to efficiently and realistically respond to economic system needs. Item B refers to the legal basis for coordinated national planning and implementation. We have in mind a national planning office with appropriate subsystem planning units. Item C refers to fiscal and monetary policies. Item D deals with laws controlling access to wealth. Item E deals with governmental budgetary processes related to marketing system development. And the last item refers to a large number of fairly specific laws necessary to provide the legal basis for many of the specific public projects and programs discussed earlier.

We have not attempted to be exhaustive. Our intention has been to illustrate the legal issues that must be considered in formulating government actions designed to stimulate food production-distribution system development.

The Problem of Priorities

The age-old problem of development planning is that of deciding where to invest the government's scarce resources. Development literature essentially reflects the struggle for understanding the development process in order to help with those tough priority questions. Development literature has been through the social infrastructure syndrome where writers concluded that all countries should first strive to reach a certain level of infrastructure development; and the industrial and the agricultural fundamentalist syndrome, where writers argued successively that each respective sector should be developed first. It now appears that we're in the small-farmer, low-income consumer syndrome. We are not suggesting a marketing syndrome. Rather, we hope (no doubt in the same hope of those who have gone before us) to have provided some additional understanding of the issues of development. We have attempted to integrate marketing issues into development thought in a way that reflects reality in

the current economic processes of many Latin American countries.

But the difficult question about priorities remains. How does one decide where to allocate scarce government resources in light of all the various competing demands for public funds, and even in light of the many things suggested in Figure 5.1? Obviously there are no pat answers. The question of priorities must be battled out in each country through some combination of research, economic analysis, political pressures, personal biases and just plain luck. We believe, however, that many governments put too little priority on issues of market coordination.

We would offer three simple observations (or rules of thumb) that have grown out of our experience and the approach outlined in Figure 5.1. We believe that heavy emphasis on the use of government resources should be placed on human resource development. The individual human being is by far the most important and flexible of all production factors. Investments in things (e.g., capital goods, projects, etc.) are very permanent investments. And there is great risk that political, economic, social or environmental changes will render such investments obsolete in a few years. A second observation is that infrastructure investments should be programmed to complement (not dominate as is so often the case) ongoing development processes. Infrastructure projects should be used to fill obvious gaps and then only when there is certainty (1) that the system is ready to "manage" the project and (2) that the project is designed so as to truly mesh with overall system development.

The third observation is that careful attention should be paid to long-term sequencing of development actions. Too often, development actions are not in phase with system evolution. There is still much to learn about these kinds of observations. Hopefully, additional research and reflection on development processes will permit further specification of an approach to use in determining priorities for food

production-distribution system development.

CHAPTER 6

ORGANIZING AND IMPLEMENTING MARKETING IMPROVEMENT PROGRAMS

In earlier chapters, we drew on Michigan State University research and advisory experience to offer some general conclusions about the role of market development in the food systems of less developed countries. We also attempted to give the reader a summary comparison of marketing problems in Latin American countries where LAMP has been involved. In the course of our work in those countries, we evolved an institutional development and research methodology for agricultural market development in Latin American countries.

In this chapter, we describe the basic elements of an approach that can be used by public agencies to initiate long term market system development programs. We do not view this as a unique approach or one that should necessarily be implemented without modification in all countries. Rather, it should be regarded as an outline for action, an outline reflecting what we have learned to date. We must, therefore, stress the importance of appropriately adapting the approach to fit local conditions and especially to reflect the needs of key individuals and institutions in each country.

Identifying the Need

The local initiative for marketing improvements can arise in a variety of ways. A Minister of Agriculture may become convinced that marketing is a major constraint to the expansion of output of a given commodity and the improvement of producer incomes. The Municipal Council of a large city may decide that an old traditional market area in the center of the city must be removed to reduce traffic congestion and eliminate a socially and aesthetically undesirable situation. National Planning Agency technicians may be

concerned that poorly coordinated and relatively costly marketing activites are contributing to unemployment and a lack of effective demand for consumer goods.

Typically, there are wide differences in perceptions of marketing problems and a variety of opinions on what ought to be done about them. And these perceptions are usually colored by the fact that the concerned individual or institution is involved with only a part of the total marketing system. Thus, to the Minister of Agriculture the milk marketing problem may be low prices, while the mayor of the capital city sees high prices and low quality as the principal milk marketing problems. Actually, both may be right. But their individual and partial approaches to the problem often keep them from arriving at effective solutions.

These wide variations in perspectives are probably a result of several factors. First, marketing activities are performed by large numbers of independent agents widely separated through space and time. Those who perform marketing activities are bound together in a highly complex and dynamic system of interaction and reaction. Most individuals have not been conditioned to think in "systems" terms.

Second, the educational system of most less developed countries does not provide for adequately trained marketing specialists with the knowledge base required to properly identify and deal with marketing organization problems.

Finally, there is little incentive for an individual or institution to use scarce resources to fully understand a system problem when the solution would require actions well beyond the scope and capability of that single institution. So marketing system problems are either ignored or dealt with on a piecemeal basis.

We believe that most Latin American countries would benefit by eventually moving toward a national public sector capacity to diagnose total food and fiber marketing system

problems and to prescribe appropriate system wide solutions. But we don't expect nor would we necessarily recommend that each country begin at the highest level of marketing system aggregation (i.e., the national level). The kinds of immediate problems noted at the beginning of this section may serve as entry points for market system analysis. A task force should be organized to deal with such problems in a systems context. If well done, this will lead to further opportunities for marketing system development activities and eventually to national level programs.

A significant advantage to this approach is that in the process of dealing with marketing system subparts, a core of professionals will gain valuable experience in marketing system analysis. Because of the shortage of professionals with appropriate orientation and marketing training, it may be helpful and necessary to obtain foreign technical assistance through one of the multilateral development agencies (e.g., United Nations Development Program, World Bank, the Interamerican Development Bank), bilateral development assistance (e.g., United States Agency for International Development) or other sources (e.g., Ford or Rockefeller foundations). The Food and Agriculture Organization of the United Nations, the Interamerican Development Bank, the U.S. Agency for International Development and, more recently, the World Bank are international donor agencies which to date have been most willing to provide funds for marketing technical assistance.

Assuming that recognition of some marketing problem(s) has encouraged a public institution in a developing country to seek ways of understanding and resolving that problem, and that technical assistance is being sought, we suggest that a representative (or representatives) of the prospective foreign technical assistance team be invited to spend two to four weeks making a preliminary assessment of the local situation. During this time, they should meet with local officials, high level technicians and donor agency

representatives to:

1. Obtain and discuss local perceptions of critical marketing problems and possible solutions. Group meetings should be followed by individual consultations with key personnel.
2. Present and discuss the following basic ideas on how to approach marketing problem(s):
   a) The importance of viewing the marketing system within the context of a growing economy where industrialization, specialization, urbanization and rising income levels are placing greater demands on the coordination and logistical functions of the market.
   b) The need to orient marketing reforms toward national socioeconomic development goals.
   c) The logic of diagnosing agricultural marketing problems and prescribing improvement programs within a food systems framework, pointing out some of the unforeseen difficulties that can result from narrowly conceived projects.
   d) The rationale for a long-term perspective in devising marketing reform strategies and specific action programs.
   e) The need to create a local institution capable of identifying marketing problems, evaluating alternative solutions, planning action programs, and evaluating and adapting these programs to changing needs.
3. Assess the existing information base and institutional capabilities for undertaking a marketing research and development effort.
4. Make direct observations of existing marketing activities and visit with private sector entrepreneurs regarding their problems.
5. Prepare a proposal for a marketing development program and discuss it with appropriate local officials.
6. Assess the potential capacity and commitment of the host institution(s) to support the marketing research and action program (including the human resource base, financial base, and accepted role of the institution(s) within the country's overall institutional environment).

Organizing and Institutionalizing the Program

If it is decided to move ahead with some kind of marketing research and development program, the resulting proposal must consider a number of organizational issues, including the scope and nature of the marketing program, the institutional setting for this activity, procedures for local staffing and use of foreign technical assistance.

Questions relating to the scope and nature of the initial activity are: Will the project have a narrow problem focus, such as a specific commodity, a specific marketing function (storage, transportation); an institutional focus (retailing, wholesaling, processing, assembly); a policy focus (support prices, retail price control, export quotas); or a public services focus (market information, grading)? Or will the project focus on some combination of the above?

Other relevant questions include: Shall the project deal only with food marketing or will it include distribution of agricultural inputs and consumer goods to rural trading centers? Will the primary focus be on internal marketing of basic foodstuffs or will it include export market development? Will the project be national in scope or centered within a particular geographic region?

A task force unit should be created to carry out analysis and assist in the planning of programs and policies leading to development of a progressive and efficient agricultural marketing system. The organizational goal should be to create an integrated team of experts, a data base on food marketing and an approach to marketing system analysis that will not only identify opportunities for market improvements but also examine alternatives and make recommendations to the appropriate action agencies. This should be a continuing activity, not merely an effort to produce a report identifying problems and suggesting a set of recommendations. From the beginning, this task force should strive to become closely identified with action agencies and should

engage in promotional and educational efforts regarding marketing improvement possibilities.

Figure 6.1 is a paradigm summarizing the appropriate sequence of activities.

Briefly, the key elements are: diagnosis, strategy, detailed design, promotion, implementation and re-evaluation. We believe members of the aforementioned task force should be actively involved (at least as catalysts) at every stage. In development work, there is often an unfortunate division of labor. Researchers perform the problem diagnosis and strategy formulation. Their reports are occasionally passed on to a consulting firm for detailed program and/or project feasibility studies and design. Next, some national or local institution is expected to promote and implement the project. The last and possibly most important stage, re-evaluation, is usually omitted or given little emphasis.

All stages are critically important. There should be a smooth flow from one stage to the next. Timing, continuity and commitment are important. The marketing system is dynamic. Problems diagnosed at one point in time may take on different dimensions if appropriate reform strategies are delayed. Each stage in the process offers opportunities for accumulation of knowledge about the marketing system. By having a single task force involved actively through each stage, that knowledge can be brought together for future use in the program or project in question, as well as for additional market development activities.

The institutional positioning of the task force activity described above is a critical and delicate issue, with important implications for the potential success of the marketing improvement program. For example, locating this group completely within a Ministry of Agriculture may limit its ability to deal adequately with urban food distribution problems and maintain a balance between farmer and consumer interests. Ministries of Agriculture usually place

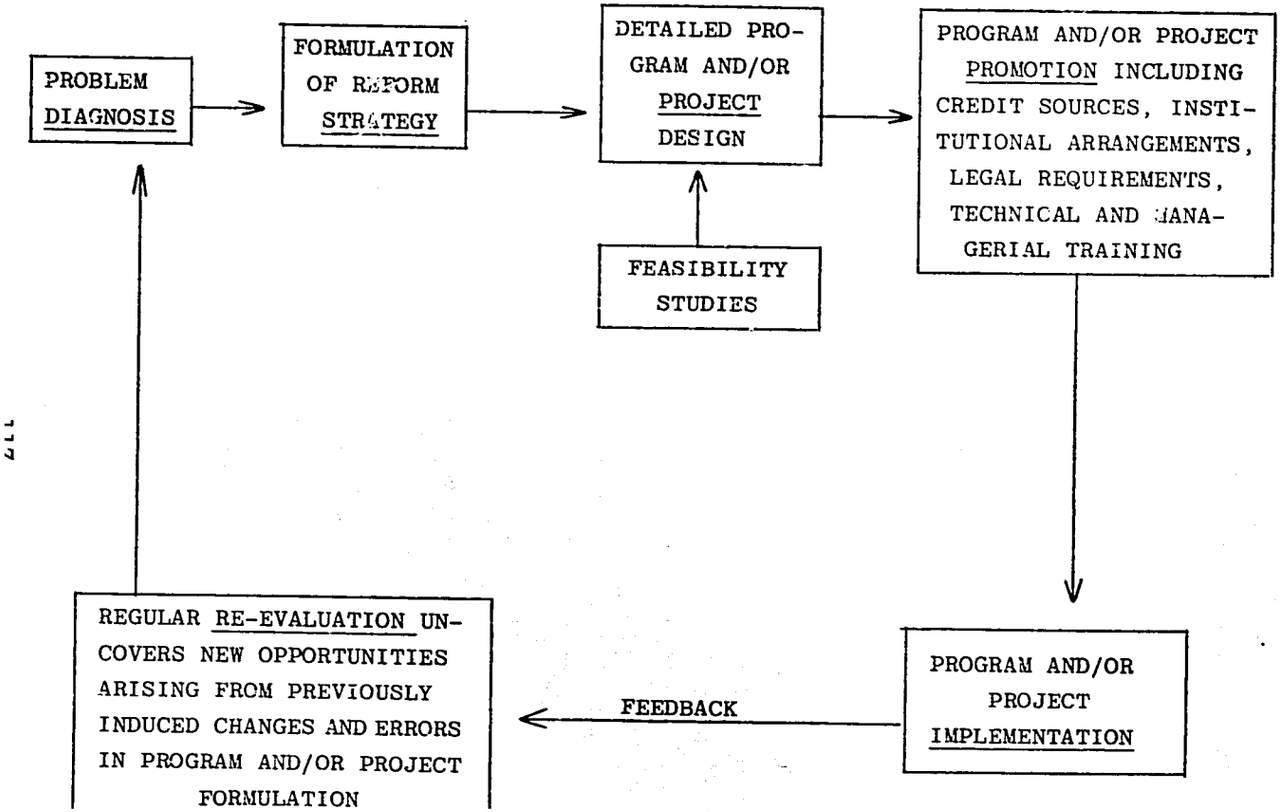
PROBLEM DIAGNOSIS
FORMULATION OF REFORM STRATEGY
DETAILED PROGRAM AND/OR PROJECT DESIGN
PROGRAM AND/OR PROJECT PROMOTION INCLUDING CREDIT SOURCES, INSTITUTIONAL ARRANGEMENTS, LEGAL REQUIREMENTS, TECHNICAL AND MANAGERIAL TRAINING
FEASIBILITY STUDIES
PROGRAM AND/OR PROJECT IMPLEMENTATION
FEEDBACK
REGULAR RE-EVALUATION UNCOVERS NEW OPPORTUNITIES ARISING FROM PREVIOUSLY INDUCED CHANGES AND ERRORS IN PROGRAM AND/OR PROJECT FORMULATION

FIGURE 6.1

highest priority on farm production problems and the socio-economic well-being of rural people. This is understandable given the political realities of the situation. Hence, there are strong tendencies toward perceiving that marketing problems limit farm production rather than taking the view that production and marketing activities should be organized from the consumer end of the market channel back toward the farm.

There are similar problems if the task force is positioned within an urban development agency where the principal concerns tend toward the solution of physical and architectural problems of rapidly growing cities, with less concern for food supply system efficiency and the need to coordinate urban food distribution with rural production-assembly-processing activities. In some countries, there may be regional development agencies (such as SUDENE in Northeast Brazil and the CVC in the Cauca Valley of Colombia) that have the authority to promote rather comprehensive, integrated efforts to facilitate regional development. In these instances, it may be desirable to organize a marketing research development and action capability within or in close collaboration with these regional development agencies.

Under certain circumstances, the creation of a new institution might be considered. Such was the case in Bogota, Colombia, where a successful food marketing development program was organized by a public corporation created by the Municipality of Bogota and a group of national agencies, including the National Institute for Agricultural Marketing, the Institute for Agrarian Reform, a regional development agency and two agricultural development banks.

Their principal goal was to rationalize the food marketing system serving Bogota and its closely related rural food supply area. This entity, known as CORABASTOS (Corporacion de Abastecimientos de Bogota), has rapidly moved from diagnosis to strategy formulation to program implementation. The CORABASTOS program includes the following activities:

1. Planning, construction and operation of a new central wholesale food market serving the Bogota area.
2. The development of more efficient wholesale-retail distribution through technical assistance, training and supervised credit programs.
3. Assistance in the organization of more efficient integrated wholesale-retail distribution activities, including single-ownership chains, retailer-owned cooperative chains, voluntary chains and consumer cooperative chains.
4. Development of a regional market information system.
5. Organization of a pilot fruit and vegetable processing plant and development of export markets.
6. Coordination and stimulation of rural production-assembly market activities oriented toward the Bogota wholesale market and the pilot processing plant.
7. Development of a national commodity exchange and futures markets for basic agricultural products.

This type of regional marketing development program will be expanded and extended to other areas of Colombia. Financial assistance has been requested from the Interamerican Development Bank.

The CORABASTOS program was organized along the lines of the recommendations that emerged from a comprehensive marketing study conducted by a LAMP-Colombian task force in the Cauca Valley Region. Hence, much of the research base and general strategy for action were available as inputs for Bogota's COROBASTOS program. Furthermore, some of the key personnel that participated in the Cauca Valley project were hired for the CORABASTOS staff, and LAMP technicians have provided advisory services to the directors of this organization. Thus, CORAPASTOS was able to move more rapidly and effectively than would normally have been the case.

LAMP is currently providing technical assistance to a

marketing research and development task force in Costa Rica (Programa Integral de Mercadeo Agropecuario - PIMA). This group is positioned in IFAM, the National Institute for Municipal Development. However, it is jointly sponsored by the Ministry of Agriculture, the National Agricultural Council, the national agricultural marketing agency, the national institute for housing and urban development and the central bank. Most of the PIMA staff members are being provided by these related agencies. The director is an employee of IFAM. The preliminary organizational activities outlined earlier have been followed in the Costa Rican project.

We have suggested some alternative ways of institutionalizing the marketing system development task force. There is no easy solution to the problem. In summary, we believe the task force should be located in the institution which can best satisfy the following criteria:

1. Assure access to and long term maintenance of high quality staff for the task force.
2. Obtain political and financial support for task force activities.
3. Obtain political and financial support for implementation of task force recommendations.
4. Achieve effective coordination with and involvement of other public and private institutions.
5. Assure long term support from the institution's leadership for the pragmatic approach to economic coordination policy issues as described in Figure 6.1.

Planning and Conducting the Research

In Chapter 5, we reviewed the dynamic role of marketing in agricultural development. Figure 5.1 showed the relationships among national development goals, specific food system development objectives, food system development strategies and specific public instruments for implementing

those strategies. While we can be fairly certain that the suggested strategies and instruments will have general applicability in most developing countries, it will be necessary to tailor the program to the specific needs of each situation.

Research is needed first because little descriptive and analytical marketing research has been done in most Latin American countries. Also, Figure 5.1 covers a broad range of potential problems, which may not all be important in a given situation. And even if they were, resources would probably not permit implementing the complete range of reform actions at one time. Research is needed to identify the most urgent marketing problems and determine how best to implement the general reform strategies.

The necessary diagnostic research might be done in as little as three months if the scope of the study is relatively narrow and/or previous relevant research has been done. On the other hand, a year-long study may be necessary under certain circumstances. In any case, to retain political and institutional support, the research portion of marketing improvement projects should not go much beyond 12 months. By then practical solutions to urgent marketing problems should be identified and appropriate action initiated in order to begin quickly to resolve some of the problems.

The scope of the project will obviously determine the nature of the diagnostic research. The research must be designed to describe the system, diagnose its weaknesses and identify opportunities for improvements. A complete national or regional level study should include the following:[1]

1. A statistical overview of the agricultural production-distribution system including historical trends and future projections of critical

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[1]For an example of this type of research study, the reader is referred to the LAMP Colombia Report.

variables. Production, consumption and demographic data must be organized as a framework within which realistic marketing facility investments and institutional changes can be planned.

2. A diagnostic description of the existing urban food distribution system for the largest urban center(s) and related secondary cities and rural trading centers.
3. A diagnostic description of the production-assembly systems for the major food commodities (grains, meats, fruits and vegetables, poultry and eggs, milk). These studies should be closely linked to the urban food distribution study.
4. Diagnostic studies of specialized industries in the food system:
   a) Transportation
   b) Packaging
   c) Industrialized farm inputs (seeds, fertilizers, pesticides, machinery, feed concentrates).
5. A description and diagnostic evaluation of selected aspects of public sector involvement in the food system:
   a) Laws and regulations
   b) Information services
   c) Credit policies and programs
   d) Research, extension and training
   e) Price and income policies.

It is important that researchers make full use of previous marketing studies and available secondary data. In some instances, these materials do not exist or can be obtained only by a careful search among various governmental agencies and contacting the most knowledgeable technicians. LAMP experience indicates that local staff members are likely to underutilize existing information and data.

Information gathering should be oriented primarily toward system functioning in terms of interrelationships among

the parts and resulting system performance, rather than to description and analysis of the parts per se. Given this orientation, the information gathering process can serve a dual purpose. In addition to its prime role of information acquisition and diagnostic evaluation of change possibilities, the research process can be used to train local nationals in systems analysis and interactions.

We suggest that researchers spend the first few weeks reviewing previous research and secondary data and in field observation of marketing activities that will be the subject of their research. We have found that requiring researchers to prepare research memoranda on market observations and informal interviews is an excellent way to encourage meaningful interactions and assure retention of the results.

Where published data and informal interviews are not sufficient for meaningful evaluation of market system performance, it may be necessary to collect additional primary data. In that case, we suggest a combination of survey research and in-depth case studies.

It is often necessary to first establish meaningful groupings of market system firms. Broad categories of participants can be rather readily identified (e.g., consumers, retailers, wholesaler-retailers, wholesalers, assemblers, farmers). It will also be necessary to identify important subcategories within each category. For example, within the retail sector there are public stalls, small neighborhood stores, and larger self-service stores. The next step is to estimate the number of firms in each meaningful category. Census data, tax records or previous research results can provide the basis for such population estimates. If reliable information is not available, researchers may have to devise a survey using area sampling techniques to estimate the population of each subcategory of market participants.

Survey research is especially useful in determining the volume of product flowing through different types of market participants and from one geographical location to

another, as well as managerial-technological characteristics, and competitive behavior of market participants. But the information obtained in surveys really only helps the researcher begin to understand the complex marketing system. And surveys are costly and time-consuming. Thus, if population estimates and basic descriptive data can be pieced together from other sources, the surveys may not be necessary. Lengthy major surveys are probably out of the question in marketing studies limited to less than six months.

We have found that in-depth case studies are an effective way of obtaining detailed information about the operations and interactions of firms and channels in the marketing system. Ideally, previous survey research or census data are used to identify characteristics of the population for the purpose of establishing homogenous sampling strata. The researcher then selects 10 to 20 firms from each of the relatively homogenous strata for depth analysis. The number of sampling strata will, of course, depend on population variance for key characteristics. The researcher uses detailed interview guides rather than structured questionaires. The objective is to understand how and why the firm operates as it does. The interview must normally be completed by the researcher or a highly qualified assistant. Often, the interviewer must spend several hours or days with the respondent.

We used this approach with retailers and wholesalers in Recife, La Paz and Cali. We have used a similar approach with assemblers. In this case, the researcher travels with a trucker as he moves through the countryside on buying trips. With a camera, the researcher can record the entire assembly process on film. He has an opportunity to interview the trucker or merchant while traveling, and he can obtain information from the farmer while the merchandise is being loaded.

With this type of case method, the researcher not only receives information directly from the respondent, but also

observes his actions. For example, since we are very concerned with channel relationships, it is useful to observe and record the interactions between channel participants, as well as question the respondents regarding these relationships. Our experience suggests that the observation approach, although more time consuming and difficult, yields better results than structured questionnaires. It also permits the interviewer to become almost an active element in the marketing process, thereby enhancing learning in a way impossible using only a structured questionnaire.

The research methodology suggested above can for several reasons lead quickly into action programs. First, census data or preliminary surveys provide the general population parameters, and case studies provide detailed data. Surveys can be kept brief and uncomplicated, and the small case study sample sizes facilitate rapid analysis. Second, emphasis on participant actions and interrelationships lends itself to reform programs, rather than descriptive analysis. Third, and perhaps most important, we expect researchers will be permanent staff members of the host institution charged with implementing the results of the study. Thus, the continuity between research and action can be maintained. Implementers will have the in-depth experience born of the research process, and a very real sense of long term commitment can be developed.

If properly carried out, the diagnostic description of the existing marketing system will provide a reliable picture of the system's organizational structure, operational characteristics, elements of change, and barriers to desirable changes as seen by participants and foreseen by technicians attempting to assess future consumer demand and farm production conditions.

Some of the more relevant questions to be answered by the research and development task force are as follows:

1. What are the existing characteristics of the consumer market for food with respect to quantities purchased by different income groups, shopping

habits and attitudes toward existing retailing services?

2. What will the trends in population growth, level and distribution of incomes, and urbanization patterns in cities be over the next 10 to 20 years? What effects will these changes have on demand for food products and food marketing services?
3. What is the organizational structure at the retailing, wholesaling, processing, assembly levels? What services are provided at different stages in the system? What are the prevailing price spreads, costs and investments at different stages in the marketing system?
4. What are the procedures for arranging transactions and coordinating product flow in the marketing channels for the major products?
5. What are the major problems confronting the more progressive food marketing entrepreneurs in the areas of product procurement, internal operations, finance, government regulations, competition from other entrepreneurs (public or private) and market infrastructure?
6. What evidence can be cited to indicate poor market performance with respect to costs of providing existing services, effectiveness of vertical coordination mechanisms in communicating consumer demands to marketing firms and ultimately to farmers, adequacy of variety, quality and condition of products reaching consumers, effectiveness of product distribution over space and over time, progressiveness of public and private enterprises in adopting new marketing practices, and equitability of the system in distributing benefits of marketing improvements?
7. Is there evidence that market instability and poor market coordination have resulted in high and

costly levels of risk and uncertainty for farmers, as well as other market participants? What are the major causes of market related risks and uncertainties?

8. Is it possible to identify potential innovators, i.e., individuals who have adopted improved management practices which could be transferred to others?
9. What are the problems and opportunities for encouraging improved distribution channel coordination through sequential introduction of new management practices and coordination arrangements.

During the preliminary studies, there should be a continuing dialogue among staff members and between the staff and selected public agency officials and private sector leaders. As the preliminary study period draws to a close, attention should focus on a set of interrelated diagnostic conclusions and a proposed strategy for a marketing improvement program. At this point, it would be useful to discuss the proposal with key public sector officials and to hold a seminar involving both public and private sector representatives. The purpose of these activities is to gain support for a longer run market improvement program and a set of specific projects to achieve both short-run and long-run gains.

Integration of Research and Program Implementation

Public officials authorizing the expenditure of funds for marketing research and development activities are anxious to see quick, concrete results in the form of practical solutions to highly visible marketing problems. Thus, it is important that leaders of the market development program be action oriented. We have suggested that where possible research, strategy formulation, program design, promotion and implementation stages be closely integrated and carried out by a single task force.

The diagnostic research described earlier cannot be expected to provide final details on all the different kinds of problems and related solutions that might have been uncovered. But the problem that originally motivated public officials to finance a marketing research and development activity must be dealt with adequately. A practical solution or alternative solutions to that problem must be included in the report, along with suggestions for implementation.

We believe it is beneficial for researchers to be involved in the implementation of their suggested reforms. The researcher will be more realistic if he expects to be partly responsible for putting his recommendations into operation. His participation in the research, if properly done, should make him a highly knowledgeable public servant on a given marketing issue. And the researcher who devises the problem solution should be in a strong position to visualize its implementation and carry it out.

The second and longer term phase of work for the marketing research and development task force will probably include both implementation activities and further research and policy analysis. In addition to direct solution of the specific problem that motivated the program, several other kinds of public programs might be implemented. Marketing training activities, market information programs, preparation of grading standards and development of marketing extension programs are all examples of activities that might take priority in the second phase. Additional research will probably be oriented toward further detailing the dimensions of problems uncovered in the preliminary study or to provide greater specificity and evaluation of reform recommendations. For example, it may be necessary to:

1. Prepare detailed feasibility studies for major public infrastructure investments such as wholesale market, transportation, storage and processing facilities.

2. Prepare plans for financing, construction and operation of approved public facilities.
3. Prepare similar projects for implementation by cooperatives or other private sector marketing institutions.
4. Develop plans for channeling additional credit resources toward the commercial sector as a stimulus to modernization and improved performance.

The need for foreign technical assistance for this kind of program will vary substantially, depending on the size of the country, the project scope within the country and the availability of qualified local technicians. In all cases, it is recommended that the foreign technicians serve as advisors to the program, rather than contractors who will conduct a quick study, render a report and depart. Technical assistance needs are greatest during the initial organizational period, the preliminary diagnosis and the planning of a longer term strategy and related set of project activities.

The foreign advisor's task is largely educational. Once a critical mass of trained personnel and the political commitment has been achieved, foreign technical assistance may be needed only intermittently for short term consultation on overall organizational problems and strategic and tactical adjustments in the program. Their continued participation on a consulting basis as objective critics of ongoing programs may also have high payoffs. Meanwhile, more specific technical assistance should be programmed to deal with engineering and operations problems requiring highly specialized skills.

Comprehensive marketing reform programs, like many other basic economic development activities, can only be achieved over a long period of time. The type of program recommended above should operate with a 5 to 10 year planning horizon. Within that time span, high priority should be given to training technicians for both public and private

sector positions in agricultural marketing. An appropriate human resource development strategy should make provision for three levels of training:

1. In-service, short term training for public agency planners, market analysts and marketing technicians, currently employed in public agencies and private firms.
2. Improved university-level training within the country to increase the number and quality of future market analysts and managers.
3. Specialized foreign graduate training for a limited number of future high level analysts and university teachers.

Meaningful market reform is no easy task. A substantial intellectual commitment must be made by politicians and technicians who are viewing these issues de nouveau. Scarce human, financial and political resources must be allocated to programs which are often institutional, rather than physical, in nature. That is, the approach recommended in this monograph focuses on such issues as communication systems, grading standards and channel relationships, rather than on central markets or grain storage facilities. The results of market reform are not immediately apparent to the public. Those involved in market reform must have a 5 to 10 year time horizon. Continuity and commitment are critical. The task is challenging and, we believe, the rewards are exciting.

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