SOME MARKETING CONSIDERATIONS FOR THE ANALYSIS OF OPPORTUNITIES TO EXPORT PROCESSED FOOD IN LATIN AMERICA

by

J. Pablo Torrealba M.

A RESEARCH PAPER

Submitted in partial fulfillment of
the requirements (under Plan B) for
the degree of

MASTER OF SCIENCE

1970

ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to Dr. Harold Riley, my academic advisor, for the valuable assistance and encouragement he has given me in carrying out this research paper as well as during the course of all my studies.

I am also indebted to Dr. Lester Manderscheid for his constructive criticism and suggestions.

I want to extend my gratitude to all the staff members and fellow graduate students of the Department of Agricultural Economics who have given me assistance in so many ways, intellectual stimulation and most of all, their friendship.

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I. INTRODUCTION

One of the major obstacles to the development of most Latin American countries has been the concentration of exports in a few agricultural commodities which have had unstable prices in world markets. Furthermore, prices for these agricultural products have been declining relative to the prices of the goods imported in this region[1]. Consequently, there have been sharp fluctuations in the foreign exchange earnings and increasing difficulty in obtaining the imports needed to sustain satisfactory rates of economic development. Many countries facing this situation are making an effort to diversify their export bases. One of the possible means of attaining diversification is through the development of an export-oriented food processing industry or sector. This possibility seems promising, due to the absolute and comparative advantages found in the production of some agricultural commodities.

The purpose of this paper is to point out that there are many barriers to the development of export markets for processed food besides the traditional issues of production costs, freight costs and import restrictions. Many of these barriers have not been properly recognized by entrepreneurs and public officials. This may account for some of the past failures in attempts to expand or initiate such export activities. The objective of

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1. The problem of the concentration of exports is well documented in: Montague Yudelman and Frederic Howard, "Agricultural Development and Economic Integration in Latin America" (mimeographed preliminary version prepared for the Tenth Meeting of the Board of Governors, Inter American Development Bank, April 1969), pp. 56-58. The deterioration of the terms of trade and instability of exports is formally presented in: United Nations Conference on Trade and Development, Towards a New Trade Policy for Development. 1964 Chapter II

this paper is to draw attention to some marketing considerations which could be useful in guiding the research needed to detect these barriers, and thus serve as a base for private decision making and government policy formation.

The need to identify such barriers for improved agricultural and industrial performance through this activity, is increasing since new export opportunities could be opening within Latin America through the Latin American Free Trade Association (LAFTA), the Andean Group[2], and possibly in other regions as well.

Benefits of a Food Processing Sector Oriented to Export Markets

A segment of the food processing industry oriented to export markets seems a feasible means of stimulating economic development. A desirable characteristic of processed food exports is that their prices might not deteriorate relative to prices of manufactured imports, and their markets generally show more price stability. Furthermore, these exports would increase the amount of foreign exchange earnings as compared to traditional agricultural commodities exports, since the operation involves exporting the commodity as well as processing, packaging and transport services. This increase in foreign exchange earnings would, of course, be proportional to the amount of domestic goods and services incorporated in the product, which in some cases can be very low.

The success of this food processing sector, besides being a contribution to external trade, could be beneficial in other ways, such as:

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2. The Andean Group is a sub-regional Free Trade Association, formed in 1968 with the participation of Chile, Bolivia, Peru, Ecuador, Colombia and Venezuela.

(i) Stimulating an expanded market for agricultural products, making them more competitive in terms of time, piace and quality.

(ii) Acting as a catalyst to external economies, such as improved grades and standards in the agricultural markets, improved transport systems, improved product packaging and/or technological advance in other marketing services.

(iii) Transmitting technological change to primary agricultural production required for the increased product quality needs, the harvest timing required in some cases, or other needs of the processing industry.

To the extent that this development is based on labor intensive products and in firms located in the agricultural production areas, it will also bring about:

(iv) Increased employment and higher income for agricultural workers, which will

(v) Slow the migration out of agriculture, alleviating the pressure on urbanization problems.

(vi) A better distribution of income among the regions of a country, and so, a more balanced geographic development.

The Main Issues

The successful development of a food processing sector for export markets will depend on two major considerations. The first is the nature and extent of demand in importing countries. It would be required for these processed food products to have high income and price elasticities of demand so that they will not show the same undesirable export earning characteristics as the primary product exports. Also, there is the question concerning import restrictions. The second consideration is whether or not the

comparative advantages in the production of primary commodities can be extended into the production of processed food products. In other words, the interest is in determining whether the processing activity is subject to comparative disadvantages that would nullify the advantages in primary production. A logical subsequent question is, if such disadvantages exist, how could the government and private activity be organized to attain efficient food processing activities.

II. SOME CHARACTERISTICS OF THE FOOD PROCESSING SECTOR

The food processing sector in Latin American countries, as most other manufacturing activities, has been almost exclusively oriented toward the domestic market.[3] Firms produce and sell guided by a different set of requirements than the export market, in terms of product quality, price and promotional needs.

Several issues converge to explain this exclusively domestic orientation. In the first place, high protective tariffs existing in all Latin American countries[4] have made it difficult for firms within the region to take advantage of a larger market with a set of conditions similar to those in their domestic markets. Thus, protective tariff structures have isolated food processing firms from external competition and have also reduced incentives to export.

Most Latin American food processing firms face relatively small markets. Market size is limited because of the small populations of most of these countries. Furthermore, the uneven distribution of income existing in this region excludes an important proportion of the population from the market

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3. This generalization is true with some exceptions. Argentina and Mexico have achieved significant levels of processed food exports. See Appendix, Tables 4 through 7.

In some countries, there are segments of the food processing industry oriented mainly to export markets, as for example the citrus processing industry in Brazil. See USDA, Foreign Agricultural Service, Citrus Processing in Brazil, FAS M-215, March, 1970.

4. Donald S. Henley, "Marketing and Economic Integration in Developing Countries", in Markets and Marketing in Developing Economies, ed. by Reed Moyer and Stanley Hollander, (Homewood, Ill.: Richard Irwin, 1968)

of most of these products. The demand is also reduced by the availability of low priced fresh food during a great part of the year, and the existance of domestic help in high income households, reducing the need for incorporated services in the food purchases.

Another characteristic pointed out by several studies, is that many firms in Latin America are non competitive,[5] and it is common to see less than "market oriented" firms.[6] Many firms face small markets and produce low volumes at relatively high unit costs.

The erroneous belief that exporting an agricultural commodity is similar to exporting a processed food product might still be held by some entrepreneurs and public officials, and may account for part of the past failures. The main difference is that traditional commodities generally are homogeneous, have well-determined quality specifications, and are traded at established prices in world markets; all which make it necessary only to put products at the threshold of market awareness, where well established channels gather the product and move it to the ultimate consumer. Conversely, many processed food products present great differentiation, and moreover, in many cases competition among firms is directed specifically toward differentiation so as to attain a more inelastic demand, following

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5. Ibid. p. 76 See also W. Glade and J. Udell "The Marketing Behavior of Peruvian Firms: Obstacles and Contributions to Economic Development", in Markets and Marketing in Developing Economies; also John Kenneth Galbraith and R.H. Holton, Marketing Efficiency in Puerto Rico (Harvard University Press, 1955).

6. According to the new marketing concept, a firm should start with its existing and potential customers and seek profits through a widely integrated marketing program having customer satisfaction as a philosophy of business operation. This implies the adjustment of products, promotion and price to meet the needs and desires of customers. Such firms have been called "market oriented" to contrast them with firms operating under the "old" marketing concept. This approach starts with the firm's existing products and considers marketing to be the use of selling and promotion to attain sales at a profit.

These differences are well explained by Philip Kotler, Marketing Management, Analysis, Planning and Control (Englewood Cliffs, N.J.: Prentice Hall, 1967). pp. 3-11.

the model of monopolistic competition. This makes marketing practices completely different. Demand might have to be "created" or "discovered" for a processed product, and then pushed through channels in order to penetrate the market; all which makes it a very complicated, expensive and risky task.

Given this need for discovering and developing markets for processed food products, potential exporters face a scale problem. The high cost of investigating and penetrating a market makes the attempt justifiable only if the potential export volume is large enough to make the cost per unit low, keeping reasonably competitive prices. The choices to the entrepreneur are only two: to investigate or not to investigate the market, generally intermediate choices cannot be taken.[7] This fact could make the possible opportunity too risky, perhaps beyond the point in which most entrepreneurs would consider taking greater risks for the possibility of greater gains.

As mentioned before, the small size of many of the food processing firms does not allow them to economically maintain appropriate communication channels which provide useful information about export markets and the technical progress in production processes achieved in other countries. Raymond Vernon[8] has pointed out that it might be that questions of price are not the main obstacles to exporting manufacturers from less developed countries. More important is the entrepreneur's ignorance in the aforementioned aspects. Other studies in this area[9] have indicated that the

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7. Raymond Vernon, "Problems and Prospects in the Exports of Manufactured Goods from the Less Developed Countries", contributed paper No. 2 to the UNCTAD meeting of 1964: Trade in Manufacturers and Semi Manufacturers. (New York, United Nations, March 1964).

8. Ibid.

9. International "Trade Center, Manual of Export Marketing Research for Developing Countries" (Geneva: G.A.T.T., 1967), p. 5, p. 24.

diffusion of the research results should have as much attention as the elaboration of the studies.

The interdependence of the whole economy is also reflected in the inability of the processing sector to attain high levels of efficiency. It is common in these countries to find highly protected input industries for the food processing firms, producing inefficiently at high costs. A classical example in some countries is that the cost of domestically manufacturing a good quality metal can is so high that it destroys many good opportunities to export. Another example of this relation is the high cost of transportation, storage and other marketing services these firms have to face. This interdependence has failed to produce external economies because of the smallness of the firms in some of the manufacturing industries of a country; instead it is providing for an "accumulation of diseconomies", reflected in the cost of other manufactured products.

The underlying conditions in agricultural production are a vital factor in the performance of a processing industry. The low quality of the resources, their low productivity, and the traditional technology used in primary agricultural production coupled with poorly organized markets, may provide an inadequate agricultural supply to fulfill the needs of food processing firms. This situation is an important constraint for the processing food for export, especially in terms of the stability of the quantities supplied and the irregularity of the product quality. Some authors[10] have mentioned these conditions in the agricultural sector as some of the main causes for inefficiency in food processing firms.

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10. Helen Hughes, Problems of Food Processing Industries in Developing Countries (Washington D.C.: International Bank for Reconstruction and Development, International Development Association, Report No. EC-169, May 1969), p. 46.

Many other reasons could be listed accounting for the failure to export processed food products, from inappropriate governmental fiscal and monetary policies to the highly protected tariff structure of many potential export markets. We will not consider these, because as was pointed out previously, this paper's concern is mainly with certain aspects of marketing.

The analysis of this situation shows that many factors have contributed to the inability to export processed food products. Some of these factors are within the firm's area of decisions, such as the lack of a competitive drive and the lack of a market-oriented approach. Other factors lie in governmental activity, such as in the organization of the food processing market as it influences the scale of production in the individual firm; the tariff structure; and to a great extent, the conditions in the agricultural sector.

III. GOVERNMENT ROLE

A. Need for Government Action

The previous discussion suggests that the government could play a very important role in designing and carrying out programs to aid individual firms that might enter into food processing for export markets.

The government also must consider other dimensions in programming the development of the food processing sector, which will impose additional requirements to such programs. These mainly refer to:

(i) Coordinating the programs with national and regional development plans, introducing another activity to which resources could be profitably committed.

(ii) Coordinating the development of the food processing sector with LAFTA countries' production and export capabilities, in view of the growing reality of LAFTA existance.[11]

(iii) Regulating the expansion of the food processing activity to prevent the formation or strengthening of monopolistic forces.

B. Specific Areas in the Food Processing Sector

Above all, the government should foster the development of those segments of the food processing sector which potentially seem to have the

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11. This point is perhaps controversial, since so far the negotiations in the Latin American Free Trade Association (LAFTA) have mainly been directed to increase trade in manufactured products of non-agricultural origin.

highest long-run social returns to the public and private resources. This is an imperative action, since the public efforts devoted to the development of export activity (through special services, or investment in infrastructure or preferential monetary or tax treatment) could encourage private investment in sub-sectors which present good prospects only in the short-run, or that are not compatible with national development plans. This situation may occur due to a misjudgement of the main parameters involved in the exporting operation (which is perhaps quite possible given their complexity).

Their is a need to select appropriate segments of the food processing sector according to these parameters or main determinants of the performance of a food processing export activity.

C. Elements for Selection

Three main elements or parameters seem to guide such a selection: demand, trade barriers and supply considerations. These are far from being simple rules of thumb, but represent a synthesis of many factors and should be seen as such, indicating only very basic elements of decision. This consideration is based on the view that the government has a role in coordinating and regulating the private sector, which is the executor of most of the economic activity. In this way, the more practical considerations which are important and can be complex and numerous, are part of an export feasibility study of the firm or group of firms level, some of which will be discussed later.

At this point, the interest is not in looking for a means of operationalizing these elements or determining decision rules, but only to enunciate the most important elements for selection.

At the outset these parameters must be thought of in a dynamic framework where uncertainties and risk are present and changes in prices, technology and product are frequently occurring in the export markets.

1. Demand Considerations:

The potential export demand for processed goods is a vital aspect for governmental consideration. One of the most important characteristics to look for are income and price elasticities, since their values will determine to a great extent, the stability of the export earnings and their probable growth pattern. When the demand is more elastic, the changes in price stemming from a given supply fluctuation will be smaller. Also, products with a high income elasticity will help insure an increasing growth in the volumes demanded, and an increasingly important market as a source of foreign exchange (provided that import restrictions do not become unsourmountable). The size of the potential demand for a country's product will indicate how much these exports would contribute to the overall needs of foreign exchange, and would determine the degree of the government's concern and committment in the development of this activity.

Although the concern of this paper is not on empirical verification problems, it is important to point out that some export markets for processed food products are restricted and very competitive.[12] The opportunities should be approached with caution. Experts in the field have stated that even for products with relatively high income elasticities,

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12. G. R. Allen and R. F. Hayns, "Marketing and Processing Possibilities for Zanzibar Fruits" (Rome: Food and Agricultural Organization, EPTA Report No. 1652, 1963).

like fruit and vegetables, "both income and price elasticities in developed countries are low, so markets cannot be regarded as unlimited... however, there is still considerable room for expansion by developing countries."[13]

2. Importing Barriers

The potential demand should be analyzed by country or economic region, since the demand elasticities may vary significantly among market areas. This analysis should also include each country's importing barriers for an assessment of the complete situation. These barriers may be in the form of tariffs, quotas, commercial agreements, preferential treatment granted to third parties, standards, grade classifications, etc. Probably the government is in the best position to evaluate the importing barrier levels, their evolution and the possibility of their modification through negotiations at national or multinational level.

3. Supply Considerations

We need to know what is the domestic production of different agricultural commodities and its stability with respect to the different varieties and/or qualities; what are the resources committed in the production, with what technology are they used and what is their productivity. This same kind of information should be analyzed for the output of processed food products. In this study the concern should be expanded to the question of what are the production potentials in terms of new products and new qualities.

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13. Helen Hughes, op. cit. p. 47

All this information will help in assessing the competitive potential of certain products in export markets. In this respect, it is very important to try to see the possible changes in technology that can be introduced, and so, the increases in productivity that can be made to improve the export potentialities, since the technology actually used in agricultural production and in the food processing industry, adapted to domestic markets, may not be suited for export markets.

An evaluation of competitive sources of production and the future trend of their supply is also essential to consider, especially when that source is domestic in the expected importing country.

D. Cost Benefit Analysis

The products that have been assessed with good prospects according to the above considerations, should be selected to be included in this export development program. Before committing efforts, by assigning resources, changing rules and regulations or creating new institutions, the government must face three kinds of decision problems. The first one is to select and rank the processed food products that show good prospects of success. Then this program should be evaluated against other alternative programs which could fulfill similar objectives. Finally the objectives pursued in these programs should be assessed against other objectives, i.e., the proposed programs should be placed in a proper development perspective.

Ideally, cost-benefit analysis should be used as the method to evaluate the "desirability" of committing public efforts to a certain project or program. In this way we can solve the decision problems mentioned above.

Essentially a cost benefit analysis consists of an evaluation of the social return to the capital resources invested in a project, therefore it needs the estimates of the social benefits and social costs. This method is based on the individual firm's project feasibility study,[14] which is modified to take into account: the differences between private and social costs and benefits (e.g.: taxes are costs for a private firm and a benefit from social standpoint); the existance of social costs and benefits resulting from the firm's operation, but which do not affect the firm and are not considered in the private accounting (e.g.: originating certain externalities); and the difference in the price of capital (rate of interest) from a social standpoint.

Ultimately, the success of a program depends on the achievement of the operating units or project, which in this case will be the potential food processing enterprises. For this reason this paper's concern turns next to an analysis of the factors with which the individual firms view their success possibilities.

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14. Ian M.D. Little and James A. Mirrless, Manual of Industrial Project Analysis in Developing Countries, Vol. II: Social Cost Benefit Analysis (Paris: Development Centre of the Organization for Economic Cooperation and Development, 1969), pp. 20-21.

This work describes the methodology of cost-benefit analysis in full detail.

IV. PROJECT FEASIBILITY ANALYSIS

An individual firm facing a certain opportunity is mainly concerned with the problem of estimating the private profitability of the required investment. The profitability, in the case of exporting processed food products, is found in the difference between the price obtained in the export market and the sum of the costs involved; the agricultural product, the cost of processing, packaging, national and international transportation, import duties and the cost of other marketing services such as distribution, promotion, etc.

An attempt to analyze the main marketing aspects of the framework in which these firms operate follows.

A. Identification of the Product(s)

It is important to define the product involved in the project (sometimes not easily done for processed foods, since most of the products in the market are differentiated, and because the final product should be a function of the market study). The interest should be focused on a range of products whose production and/or processing are somewhat related so that a project can be defined more clearly in terms of processing facilities.

It is important to keep in mind throughout all the steps of this feasibility study, that there is no well-defined product. There must be a continuous search for the effects of changing its characteristics and purposes.

B. Market Analysis

Information has to be gathered to answer three questions:

(i) What is the size of the market and its growth rate?

(ii) How much can the individual firm expect to sell in the future?

(iii) What is the production and target market(s) a firm expects to serve in deciding the basis for its distribution and marketing policy?

These answers involve the analysis of past and present demand and future expectations, through an evaluation of the available qualitative and quantitative information. This data must be complemented with defined price statistics in order to be meaningful; and all this information has to be viewed considering it through time in connection with important events or variables that have affected the market.

1. Past and Present Demand

An idea of the physical quantities involved in the market(s) in question can be obtained by getting time series of production, imports, exports and, if possible, stocks; all of which will define the effective demand. This kind of data can be found in national statistics of developed countries (or by groups of countries, as the case of the European Economic Community).

To be useful, so as to get marketing and production implications, this data should be classified according to:

a. More specific product definition according to physical characteristics. This will give some insight on the possible production techniques, the

product standards (apart from government regulations), and possible distribution patterns.

b. Characteristics of potential consumers. This classification is essential in achieving a "customer oriented" operation, which determines, in part, the success of marketing a product. The knowledge of these characteristics will describe the needs and desires of users. Thus, the marketing task is to match these needs in terms of product, price and place. For example, one useful classification for processed food products could be to categorize potential markets into three segments: direct consumers, mass feeding institutions and industrial users. These categories show different needs for quality and amount of product; different purchasing habits, and ability to pay differing prices.

Empirical studies[15] have shown that probably the industrial users market is the best one in which to start an exporting operation in a developed country with a very competitive consumer market. It presents an easier entry because of the less importance given to brand names and the heavy reliance in well-defined quality standards. This segment can be opened to great volumes with less risks, and needs fewer middlemen contacts.

c. Geographical location. This could describe the desirability of opening markets in different areas, given their density of consumption and distances involved. It will be an important part in designing the distribution system.

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15. Pan American Union, Marketing Structure for Selected Processed Food Products, Studies in Export Promotion No. 1: In the United States (Washington D.C. 1966)

Greater insight on the details of the market can be gained by obtaining sub-classifications or sub-segments of the previously defined segments. The criteria for sub-classification can be the same as for the main classification or any of the two others, e.g.: segments defined according to characteristics of the users can be sub-segmented according to other consumer characteristics or according to geographical location. The possible benefits of obtaining greater details through this method should be weighed against its greater costs, which in most cases probably are quite high.

2. Distribution Channels

The study of the market(s) should also include the discovery of the distribution channels commonly used in these kinds of products. This is very important due to the different operative methods that might be used in these foreign markets, which may require minor adaptations on which success depends. The potential capacity of each distribution channel has to be assessed relative to its costs in order to arrive at a decision.

The function of middlemen such as agents or food brokers who perform services for a certain percentage of the sales made, could be a good means of initiating the export operation at a lower level of risk than through an exclusive sales agent or resident importing office demanding substantial fixed costs,and so, running the risk of being unable to cover them because of unassured sales volume.

3. Consumer Analysis

Part of the study must show how other variables affect the demand for different products, such as the consumer's perception of quality, their

reaction to price and appearance of the product and especially important seems to be an appreciation of the consumer's attitude toward imported foodstuffs.[16] These psychological and sociological factors can be completely unforeseeable acting on the experience of a domestic market, and will provide some idea of the characteristics that the product and promotion should have.

In some cases, a higher quality product may not be easily perceived by consumers. Advertising can be a good means of emphasizing it. (e.g.: advertising of Colombian coffee in the U.S. market.)

4. Sources of Competition

The knowledge of the sources of competition and the degree with which it is excercised will provide the complementary information needed to assess the market(s). It is important to consider that competition not only comes from products or brands of the same category, but also through other products that are functionally related.

It will be desirable to know at this point:

(i) The different products and the quantities each competitor sells in the market.

(ii) The price differentials between products.

(iii) The promotion and advertising efforts committed by each product

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16. In some countries or regions, that are heavy importers of processed food, the consumer attitude towards imported food may not be much different than to domestic foodstuffs; these markets are easier to penetrate. This fact is applicable to many European countries, as reported in: Pan American Union, Marketing Structure for Selected Processed Food Products, Studies in Export Promotion No. 2: in Sweden, Norway, Denmark, Germany, Canada and the United Kingdom (Washington D.C. 1966).

(iv) The degree of product homogeinity found in the market, or the degree of brand loyalty found in consumers.

(v) How the products have evolved through time in terms of improvement or new product development.

The answers to these questions will enable an assessment of the potential quantity demanded for the individual firm or specific product, and hopefully, produce the basis for an estimate of the resources that need to be committed in marketing activities, such as promotion, for penetrating the market successfully.

Initially, when the export volume obtained in a specific market is very low relative to the market size, the demand for the product is likely to be very elastic, (perhaps almost infinitely elastic), and the major consideration will be the price level.

5. Institutional Constraints

These kinds of obstacles may take several forms, the main ones being the importing barriers: quotas, tariffs, importing monopolies and import licensing, trade by the state, and others. Another type of constraint refers to the number and difficulties attached to the different importing and exporting procedures required by the domestic and foreign trade authorities. The existing requirements and regulations in the marketing channels are more disguised forms of constraint, but nonetheless, can be equally or more difficult to fulfill than the previous ones. These usually take the form of: packaging regulations, control of additives contained, standards and grades requiring great uniformity in the product, labeling, etc.

6. Estimating the Future Size of the Market

The opportunity to export processed food should be considered only if it offers long-run prospects. The need to have an estimate of the future size of the market is essential. This kind of analysis will not only be necessary at the pre-investment stage, but it is needed for any enterprise acting in growing market that is highly competitive, and should constitute the basis for the firm's planning process.

There are several techniques in making these estimates; among the main ones are:

(i) Trend Projection. This technique is based in the study of the quantities demanded in the past years and establishing a trend line as a basis for projecting future demand. The underlying assumption is that the factors affecting the quantity demanded in the past will continue to operate in the future.

(ii) Use of international comparisons of per capita consumption levels. This technique provides crude estimates as to what the possible quantity demanded could be. It is based on the assumption that the per capita demand for some goods is the same in different countries with appropriate lags due to differences in national income or other relevant variables. In this way, knowing the per capita consumption level of a good in some country and a meaningful variable such as income per capita, we can estimate the quantity demanded in another country by making the adequate adjustment due to differences in income per capita. The comparison will be valid provided that the countries selected are similar in some basic characteristics (ethnic, geographical latitude, continent or region, etc.).

(iii) Use of price and income elasticity coefficients. Sometimes empirical studies done in the past show price and/or income elasticity coefficients which can be used to provide more refined estimates of the quantities demanded in the future. These coefficients indicate the response of the market to changes in the price of the good or to changes in the income levels. For given forecasts in the changes in these variables, the corresponding changes in the quantities demanded can be forecasted.

(iv) Family budget surveys. This technique estimates future demand based on the use of household consumption coefficients for different kinds of goods. These coefficients can be determined by surveys or sometimes can be found in past research or consumer programs. They can, perhaps, provide the most refined estimate of quantity demanded for a specific product. This information can prove to be extremely useful in considering the effect of changes in the aggregate income levels, and also in possible redistribution of income, in increases in family incomes and many times, in price changes. This information might also be fruitfully broken into geographical areas.

7. Final Market Evaluation

All this information will provide a basis for a final market evaluation. The uncertainties will have to be taken into account relative to the accuracy of information sources, the defects of the methodology used, and the validity of the assumptions underlying the estimation of the future demand. After these considerations have been made, a decision must be made as to the "best" estimate of the possible volume of products that can be sold in each market at certain prices, and the resources that have to be assigned to successfully develop the market.

C. Supply Analysis

The possibility of an efficient food processing sector depends in part on the supply and cost of raw agricultural products. Therefore an essential part of the feasibility analysis will deal with its study. At this point a firm will be interested in the answers to the following questions:

(i) What quantities can be supplied that meet the technical standards required in producing the product(s) defined?

(ii) What are the prices of these raw materials?

(iii) What is the degree of stability of raw material quantities and prices?

(iv) How could the future operation of the firm or plant affect prices and quantities supplied in the market?

(v) What is the rate of technological change in the production of these commodities? What improvement can be forecasted in these production techniques?

(vi) What has been the role of research and extension institutions as to these commodities?

(vii) What has been the supply of inputs to the farmer? What risks and uncertainties have been faced in the past by the producer?

(viii) What has been the location of production? What has been the seasonality of the quantities supplied?

All this information will allow an assessment of the characteristics of supply, which determines in part the costs involved in the processing, and what are the most limiting factors for an efficient operation.

Most important, and uncertain, is to incorporate some of the dynamic aspects involved in the supply. The main ones seem to be: the trend in supply, the response to price changes, the technological improvements as a function of price and non-economic elements, and the effect on output of reducing marketing risks and uncertainties at the producer level.

These considerations should help in deciding the marketing strategy to use in the input side, determining a significant part of the costs in the operation.

This marketing strategy is likely to be set up using vertical coordination schemes which can provide cost reductions through special technical complementarities and less risks and uncertainties.[17] Vertically integrated firms are sometimes well suited for transmitting technological change back to the producer, resulting in greater productivity, adequate product quality and timing of the harvest. Furthermore, it allows a more efficient plant operation since it enables the diversification of the geographical location of the supply sources, ensuring greater stability and a longer processing season, which means a greater use of the fixed resources invested.

The above information on the characteristics of supply will also help to decide on the best location of the plant(s), given other distribution variables, such as: roads, ports, types of transportation available,

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17. A good discussion of this type of organization is provided by Norman R. Collins, Willard F. Mueller and Eleanor Birch, "Grower-Processor Integration", California Agricultural Experiment Station, Bulletin 768, 1959.

location of the markets, etc. Deficiencies in transportation and road system will reduce the "hinderland" from where a plant can collect its raw materials, when they have to be processed while fresh. This means that in this type of firm the scale of production will have to be smaller than in developed countries possessing good transportation system, and therefore could represent a significant cost disadvantage.

D. Technical Aspects

It is also necessary to determine the different food processing technologies that seem suitable, given the constraints of quality in the agricultural supply and in the export markets' demand, and in the estimate of the possible volume of operation. This poses the economic problem of selecting one among several alternatives, all of which are more or less labor (or capital) intensive. In a static framework, probably the more labor intensive technology would be selected, since the wage levels in Latin America are comparatively low. The dynamic considerations are the essence of these feasibility studies, therefore explaining the need to consider the market growth, and the product improvement. These considerations bear implications for the technology used: capital intensive ones using modern equipment can provide economies of scale as greater output is achieved through the growth of the market. The growing quality needs of export markets in terms of product improvement and standardization, in many cases, can only be met by "modern" capital equipment and capital intensive technology. This technology would initially produce higher unit costs than a labor intensive one, decreasing the short-run profits, and increasing the initial capital outlay and the level of risk of the operation.

A firm operating with labor intensive technology that has lower unit costs in the short-run, bears a long-run risk of being caught in a situation in which the capital equipment cannot be replaced due to reduced profits resulting from a decrease in long-run prices. This fall in price could be caused by the inability to provide the higher quality levels required by the market, which can only be met by modern capital equipment; or by an increase in supply not coupled by similar increases in demand, or other reasons.

The decision concerning which technology to use should then be influenced by dynamic considerations: trying to balance the risks with the potential profitability and the financial capacity required by the different alternatives.

E. The Final Decision

The final decision of carrying out the project depends on the results of the calculation of the present value of the expected future earnings, a measure of the return to the capital resources invested.[18]

The last result is the analysis of many alternative production processes, distribution patterns, marketing methods, scale and timing of the investment, and other important variables. This calculation needs an assessment of the overall risks, which can be done through a sensitivity analysis of the project's profitability relative to these main parameters.

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18. The problems of calculation and related methodology are discussed in Development Centre, Manual of Industrial Project Analysis in Developing Countries, (Paris: Organization of Economic Cooperation and Development, 1968), pp. 106 - 42

The decision not to carry out the project does not mean that it should be forgotten, on the contrary, such a decision is very useful because it shows the conditions most limiting to the success of the project. These are given to the firm, but are endogenous to the government, and should be considered in establishing the possible government program.

Finally, it must be stressed again that an unacceptable product profitability taken from the dynamic point of view does not always call for abandonment, but for continuous awareness of the changes in the most limiting conditions; searching in this way for the proper time for a successful project.

V. POLICY CONSIDERATIONS

In planning the development of a food processing sector oriented to export markets there is also need to consider certain important issues arising from special conditions in Latin America that go beyond the economic considerations discussed previously. These issues become important elements in establishing a policy in the governmental sphere and in the individual firms. The needed information may be outside an economic analysis, and generally they will depend on the decision makers' (public officials, entrepreneurs and politicians) assessment of the situation and goals, and their ability to undertake risk. Additional research may be required to support public and private decision making.

The previous discussion showed that the government has an important role in stimulating the development of the food processing sector. Besides knowing what products have the best possibilities, several other decisions must be made.

1. Ownership Problems

Should public or private firms be stimulated? Public firms might operate more successfully in an environment of greater risk since they can better afford possible short-run losses. On the other hand, private firms are likely to operate more efficiently over the long run due to greater managerial flexibility. But private firms may not develop at all because of these risks, and so the formation of public firms may be necessary in some situations. Mixed enterprises (owned by government and private firms) perhaps could provide the combination of these benefitial elements.

Another type of ownership would be through direct foreign investment. This seems especially advantageous from an economic viewpoint due to the additional foreign exchange provided by the capital inflow that it can generate. More significant can be the advantage of technological abilities provided, and the links with the parent company which could provide a well known brand name or advertising, and suitable distribution channels in the export market, resulting in a better competitive position in some of the markets.

Agricultural cooperatives are another possible form of ownership of food processing facilities. They could have the advantage of possessing the basis for an easier establishment of a vertically oriented operation linking production and processing activities.

2. Government Aid to Private Firms

Another alternative to public ownership would be through directing government policy to aid potential exporters, possibly achieving greater efficiency and investment.

Is this aid economically justifiable?[19] How is such aid going to be directed? What are the best means to stimulate the activity, through export insurance schemes that provide less risks or permanent information and technical assistance available to entrepreneurs. Is it desirable to enact special treatment for this sector relative to the current fiscal and monetary policies? If the food processing sector is heavily dependent

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19. This point supposedly should be answered according to a cost benefit analysis, as suggested before. See pp. 14-15.

on certain inputs produced in a protected high cost industry that has not achieved the stage of economies of scale, can the use of such inputs by this export industry be temporarily subsidized by the government to attain a better competitive position in the external markets, and so attain a greater investment in food processing? This could, in turn, help the input industry in reaching these economies of scale within a shorter time period.

What degree of aid should be given so that, with the actual entrepreneurs' response to these incentives, the investments will take place in the proper time relative to the opening of future opportunities for the country (such as LAFTA, for example)?

Agricultural programs aiming to improve the quality and stability of the supply and the technology used should be considered in close connection with the measures outlined above.

3. New Firms or Expansion of Old Ones?

Another government concern will be over the question, is this development going to be achieved through expansion of the currently operating food processing firms or through the creation of new enterprises, or a combination of both. This is dependent upon some of the following considerations. Are the resources committed in actually operating food processing firms, (organized to meet domestic demands) capable of meeting the different set of needs demanded by the export markets? Is there any management, labor or equipment rigidities which can pose a serious barrier to expansion? Would these firms have an advantage over new firms in the production or marketing aspects? These differences supposedly show up in

the individual firm feasibility studies, indicating the presence of economies of size.

Such economies could be possible through more intensive use of machinery, management, technical research facilities and other fixed resources. On the marketing side, it seems possible that export markets for these kinds of products are penetrated by coming from acceptance of the product by a particular channel of distribution, certain segment of the market, or other reasons. If the costs of the operation are not constant through a wide range of output, a newly established firm is likely to run into initial losses, requiring greater capital, and probably would attain a lower profitability in the short run.

Existing firms operating in the domestic market could also have the advantage of being able to better afford the greater risks of export markets, due to the complementarity that more secure domestic markets provide them.

In what way will the development of new or old firms affect the structure of the domestic markets of the agricultural products and processed food?

4. The Possibility of Developing New Agricultural Products

Should processing opportunities be considered for agricultural commodities not produced in the country, which have good possibilities of being introduced and diffused in the domestic agriculture? This question is at the government level since it probably cannot be handled by an individual firm if the economic scale of processing is large. It is, therefore, out of the scope of a feasibility study. Such agricultural

production has been stimulated in some cases,[20] but through the use of considerable government resources in extension and other facilities, all which may turn out to be socially profitable only in the very long run. The problem in this case also lies in estimating the outcome of the attempt to develop such possibilities of farm production at a level of comparative efficiency to other international sources of supply, when it has little or no demand in the domestic market. This would be an alternative of greater risk for a government program.

5. Income Distribution

Another point is the consideration of how the additional income generated will be distributed among people and regions. If the process is likely to concentrate even more income in the hands of the most prosperous regions and people, should additional constraints be imposed to prevent such effects? What forms should these constraints take so as to keep valid the basic investment incentives?

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20. The introduction of pyrethrum in Ecuador took 10 years before it was grown in commercial scale, and another 10 years before its volume made impact on the foreign exchange earnings. It will probably be another 10 years before production reaches optimum levels, as reported in: Ralph J. Watkins, Expanding Ecuador's Exports, Surveys and Research Corporation, Praeger Special Studies in International Economics and Development, Praeger, New York, 1967. p. 59.

VI. SUMMARY

One of the major obstacles to the development of Latin American countries has been the instability of export earnings and the relative decline of agricultural commodities prices relative to the prices of manufactured imports. The development of a food processing sector oriented to export markets might stabilize and increase export earnings, contributing to higher rates of economic growth. This possibility depends, in part, on the income and price elasticities of demand for these processed products and the degree of competitive advantage that the processing activity can achieve relative to other sources of supply in the export markets.

Food processing firms in Latin America have generally been unable to export to neighboring countries due to import restrictions. Other reasons for the lack of an export drive are the small scale of operation of most firms due to the smallness of the domestic markets, the dependence on domestic high cost industrial inputs, the lack of information about export market opportunities, and the greater risks attached to these exporting activities.

These reasons suggest that the role of the government could be extremely helpful in stimulating the development of this sector. This effort should be directed only to sub-sectors that show good prospects of success in a long run. The elements to make this selection should be the demand and supply characteristics of the products involved, and the assessment of the importing barriers of potential export markets.

Priorities can be assigned through the use of social cost-benefit analysis, which, to some extent, is based on an individual firm's profitability analysis.

The individual project's feasibility study should be based on market analysis which involves an estimation of the present, past and future demand. Considerations of the agricultural supply, the processing technology, the risks and the assessment of uncertainties involved, should enter into the final decision. One of the most useful results of these studies will be to show which are the most limiting conditions for a successful operation, a very valuable information for designing government programs and for the organization of future investment projects in food processing.

In designing government programs to aid food processing firms, some important issues must be considered, the answer to which may lie outside the sole economic analysis and may call for additional research. The main issues refer to: which is the best type of ownership for these firms to suit the objectives sought; the justification of government aid to these firms; and the decisions concerning what means to use, and what kinds of firms should receive aid. Finally, the issue of income distribution should also be considered for its special importance in Latin America.

APPENDIX

Table 1. Relative Importance of Food Processing Within the Manufacturing Sector of Selected Latin American Countries.

Country	Year	Number of food processing firms as a percentage of total firms in manufacturing		Value added in food processing as a percentage of final product value	
		Food Products	Tobacco & Beverages	Food Products	Tobacco & Beverages
Argentina	1953	11.5	4.3	31.2	59.0
Bolivia	1957	29.0	7.5	15.3	58.2
Brasil	1962	22.2	3.9	30.1	59.0
Colombia	1963	25.5	3.6	25.6	68.6
Costa Rica	1957	51.7	0.9	24.5	76.4
Chile	1957	25.3	2.1	32.5	68.2
Ecuador	1960	30.3	7.0	37.5	52.5
El Salvador	1961	59.7	4.1	31.1	75.3
Guatemala	1953	24.1	6.2	26.0	44.2
Honduras	1960	22.6	7.1	30.1	72.3
Mexico	1960	37.5	2.4	34.3	52.5
Nicaragua	1953	51.4	2.7	43.1	71.6
Panama	1957	30.2	5.6	32.9	38.3
Paraguay	1955	27.1	7.7	29.6	39.5
Peru	1956	23.6	8.1	36.6	63.8
Dominican Rep.	1960	31.4	2.8	--	--
Venezuela	1953	37.1	1.9	37.8	55.1

Source: Pan American Union, America en Cifras, 1965, Situacion Economica 2: Industria (Washington D.C.: Pan American Union, 1966), pp. 12-13.

Table 2. Value Added in Food Processing Industries and their Share in the Total Value Added by the Manufacturing Sector, in Selected Latin American Countries

Country	Year	Value Added in Food Processing Industries (Thousands of U.S.$)[a]		Share of Food Processing in the Total Value Added by the Manufacturing Sector		
		Food Products	Tobacco & Beverages	Food Products	Tobacco & Beverages	Total
Argentina	1953	400,964	245,924	15.0	9.2	24.2
Bolivia	1957	1,362	3,302	11.3	27.4	38.7
Brazil	1962	478,062	161,250	13.3	4.5	17.8
Colombia	1963	134,446	187,055	13.8	19.2	33.0
Costa Rica	1957	18,176	12,000	36.2	23.9	60.1
Chile	1957	68,780	39,080	17.6	10.0	27.6
Ecuador	1960	18,806	8,562	35.8	16.3	52.1
El Salvador	1961	45,403	12,818	46.4	13.1	59.5
Guatemala	1953	4,296	7,108	16.8	27.8	44.6
Honduras	1960	5,310	12,609	19.5	46.3	65.8
Mexico	1960	312,502	200,641	17.6	11.3	28.9
Nicaragua	1953	7,171	4,849	38.6	26.1	64.7
Panama	1957	8,104	6,811	37.6	31.6	69.2
Paraguay	1955	5,985	2,338	25.6	10.0	35.6
Peru	1956	53,609	19,879	24.0	8.9	32.9
Venezuela	1953	89,093	78,612	22.1	19.5	41.6

Source: Pan American Union, America en Cifras, 1965, Situacion Economica 2: Industria (Washington D.C.: Pan American Union, 1966), p. 15

[a] Value Added is expressed in thousands of dollars at the exchange rates prevailing in the year for which the data was obtained in each country.

Table 3. Total imports and Imports of Latin American Origin of Meat in Airtight Containers and Meat Preparations in Selected Countries. Year 1968[a]

(Thousands of Dollars)

Country of Origin	Importing Countries				Total imported from each country
	Canada	USA	Japan	Europe [b]	
Total	11,162	292,020	1,357	351,607	656,146
Brazil	311	13,958		3,731	18,000
Paraguay	212	6,294	7	7,357	13,870
Argentina	2,115	66,064	132	59,152	127,463
Uruguay	161	3,078		2,320	5,559
Nicaragua		218			218
Other Latin American Countries		112			112
Total Latin America as Percentage of the Market	25.1	30.7	10.2	20.6	25.2

Source: Organization for Economic Cooperation and Development, Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan. - Dec. 1968 (Paris, OECD, 1969), p. 95

[a] Commodities grouped under number 023 in the SITC classification.

[b] Includes the following countries: Belgium, Luxemburg, Netherlands, Germany, France, Italy, United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland, Portugal, Ireland, Spain, Greece, Turkey and Yugoeslavia.

Table 4. Total Imports and Imports of Latin American Origin of Cheese, Butter and Curd[a] in Selected Countries. Year 1968

(Thousands of Dollars)

Country of Origin	Importing Countries				Total imported from each country
	Canada	USA	Japan	Europe[b]	
Total	14,286	70,724	15,349	876,644	977,003
Argentina	136	1,941	4	896	2,977
Uruguay				123	123
Total Latin America as percentage of the market	1.0	2.7	0.0	0.1	0.3

Source: Organization for Economic Cooperation and Development Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan - Dec 1968 (Paris: OECD, 1969), pp. 97-98

[a] Grouped under commodities numbers 023 and 024 in the SITC classification.

[b] Includes the following countries: Belgium, Luxemburg, Netherlands, Germany, France, Italy, United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland, Portugal, Ireland, Spain, Greece, Turkey and Yugoeslavia.

Table 5. Total Imports and Imports of Latin American Origin of Cereal Preparations and Preparations of Flour of Fruit and Vegetables[a] in Selected Countries. Year 1968.

(Thousands of Dollars)

Country of Origin	Importing Countries				Total imported from each country
	Canada	USA	Japan	Europe[b]	
Totals	12,391	30,590	16,389	203,266	262,636
Mexico			43		43
Venezuela			45		45
Total Latin America as Percentage of the Market			0.5		0.03

Source: Organization for Economic Cooperation and Development, Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan - Dec 1968 (Paris: OECD, 1969), p. 111

[a] Commodities grouped under number 048 in the SITC classification

[b] Includes the following countries: Belgium, Luxemburg, Netherlands, Germany, France, Italy, United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland, Portugal, Ireland, Spain, Greece, Turkey and Yugoeslavia.

Table 6. Total Imports and Imports of Latin American Origin of Preserved Fruits and Fruit Preparations[a] in Selected Countries. Year 1968

(Thousands of Dollars)

Country of Origin	Importing Countries				Total imported from each country
	Canada	USA	Japan	Europe[b]	
Totals	63,133	91,055	24,281	490,899	669,368
Mexico	1,841	18,004	10	532	20,387
Honduras	144	1,175	9	493	1,821
Brazil	2,619	5,176		6,020	13,815
Argentina		438		1,732	2,170
Colombia		59		8	67
Venezuela	2	301		2	305
Other Latin American Countries	291	1,325	14	936	2,566
Total Latin America as percentage of the market	7.8	29.1	0.1	2.0	6.1

Source: Organization for Economic Cooperation and Development, Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan - Dec 1968 (Paris: OECD, 1969), p. 111

[a] Commodities grouped under number 053 in the SITC classification.

[b] Includes the following countries: Belgium, Luxemburg, Netherlands, Germany, France, Italy, United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland, Portugal, Ireland, Spain, Greece, Turkey and Yugoeslavia.

Table 7. Total Imports and Imports of Latin American Origin of Vegetables, Roots and Tubers Preserved or Prepared[a] in Selected Countries. Year 1968.

(Thousands of Dollars)

Country of Origin	Importing Countries				Total imported from each country
	Canada	USA	Japan	Europe[b]	
Totals	22,369	114,771	12,368	295,942	445,450
Mexico	129	1,803		6	1,938
Peru	2	19		859	880
Brazil	226	1,324	18	114	1,682
Chile	7	201		19	227
Argentina		95		2	97
Dominican Republic		1,649			1,649
Total Latin America as Percentage in the Market	1.6	4.4	0.1	0.3	1.5

Source: Organization for Economic Cooperation and Development, Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan - Dec 1968 (Paris: OECD, 1969), p. 129

[a] Commodities grouped under the number 055 in the SITC classification.

[b] Includes the following countries: Belgium, Luxemburg, Netherlands, Germany, France, Italy, United Kingdom, Norway, Sweden, Denmark, Austria, Switzerland, Portugal, Ireland, Spain, Greece, Turkey and Yugoeslavia.

REFERENCES

Allen, G.R. and R. F. Hayns. "Marketing and Processing Possibilities for Zanzibar Fruits". FAO Report EPTA No. 1652. Rome: Food and Agriculture Organization, 1963.

Collins, Norman R., Willard F. Mueller and Eleanor M. Birch. Grower Processor Integration. California Agricultural Experiment Station, Bulletin 768. University of California, 1959

Economic Commission for Latin America. "Fiscal Incentives for Export". Economic Bulletin for Latin America. Vol. XII No. 1. United Nations, May, 1967.

Economic Commission for Latin America. "International Organizations in Export Promotion in Latin America". Economic Bulletin for Latin America. Vol. XIV No. 1. United Nations, 1969.

Galbraith, John Kenneth and Richard H. Holton. Marketing Efficiency in Puerto Rico, Cambridge, Mass.: Harvard University Press, 1955.

Glade, W. and J. Udell. "The Marketing Behavior of Peruvian Firms: Obstacles and Contributions to Economic Development". Markets and Marketing in Developing Economies. Ed. by Reed Moyer and Stanley Hollander. Homewood, Illinois: Richard D. Irwin, 1968.

Henley, Donald S. "Marketing and Economic Integration in Developing Countries". Markets and Marketing in Developing Economies. Edited by Reed Moyer and Stanley Hollander. Homewood, Illinois,: Richard D. Irwin, 1968.

Hughes, Helen. Problems of Food Processing Industries in Developing Countries. International Development Association Report No. EC-169. Washington D.C.: International Bank for Reconstruction and Development, May 1969.

International Trade Center. The Compilation of Basic Information on Export Markets. Geneva: United Nations Conference on Trade and Development - General Agreement and Tariff Treaty, 1968

International Trade Center. Export Marketing Research for Developing Countries. Geneva: General Agreement and Tariff Treaty (GATT), 1967.

Kotler, Philip. Marketing Management, Analysis, Planning and Control. Englewood Cliffs, N.J.: Prentice Hall Inc., 1967.

Latin American Studies Center. Market Processes in La Paz, Bolivia. Research Report No. 3, Latin American Market Planning Center, Michigan State University, 1969.

Latin American Studies Center. Market Processes in the Recife Area of Northeast Brazil. Research Report No. 2, Latin American Market Planning Center, Michigan State University, 1969.

Little, Ian M.D. and James A. Mirrless. Manual of Industrial Project Analysis in Developing Countries. Vol. II: Social Cost Benefit Analysis. Paris: Development Centre of the Organization for Economic Cooperation and Development, 1969.

Mittendorf, H.J. "Marketing Aspects in Planning Processing Enterprises in Developing Countries" in Monthly Bulletin of Agricultural Economics and Statistics. Vol. 17, No. 4. Rome, FAO, April 1968.

Moore, John and Frank Padovano. U.S. Investment in Latin American Food Processing. Praeger Series in International Economics. New York: Praeger, 1967.

Neumark, Daniel S. "Possibilities of Establishing Food Processing Industries in Developing Countries for Export." Contributed paper No. 8 to the United Nations Conference on Trade and Development, meeting of 1964. Trade in Manufactures and Semi Manufactures. E/CONF. 46/P/8 New York: United Nations, March 1964.

Organization for Economic Cooperation and Development. Trade by Commodities, Market Summaries: Imports, Statistics of Foreign Trade OECD Series C, Jan - Dec, 1968. Paris, OECD, 1969.

Organization for Economic Cooperation and Development. Manual of Industrial Project Analysis in Developing Countries. Vol I: Methodology and Case Studies. Paris: Development Centre of OECD, 1968.

Pan American Union. Marketing Structure for Selected Processed Food Products. Studies in Export Promotion No. 1: In the United States. Washington D.C.: Pan American Union, 1966.

Pan American Union. Marketing Structure for Selected Processed Food Products. Studies in Export Promotion No. 2: In Sweden, Norway, Denmark, Germany, Canada and the United Kingdom. Washington D.C.: Pan American Union, 1966.

Pan American Union. América en Cifras, Situación Económica: 2, Industria. Washington D.C.: Pan American Union, 1966.

United Nations Conference on Trade and Development. Towards a New Trade Policy for Development, Report by the Secretary General of UNCTAD, E/CONF. 46/3. New York: United Nations, 1964.

United States Department of Agriculture. Citrus Processing in Brazil. Foreign Agricultural Service, Report FAS M-215. Washington D.C.: U.S. Dept. of Agriculture, 1970.

Vernon Raymond. "Problems and Prospects in the Exports of Manufactured Goods from the Less Developed Countries." Contributed paper No. 2 to the United Nations Conference on Trade and Development, meeting of 1964: Trade in Manufactures and Semi Manufactures. E/CONF. 46/P/2. New York: United Nations, March 1964.

Watkins, Ralph J. Expanding Ecuador's Exports, Praeger Special Studies in International Economics and Development. New York: Praeger, 1967.

Yudelman, Montague and Frederick Howard. "Agricultural Development and Economic Integration in Latin America". Mimeographed preliminary version prepared for the Tenth Meeting of the Board of Governors. Washington D.C.: Inter American Development Bank, April 1969.